The American Journal of

CLINICAL MEDICINE

Dependable Therapeutic Fact for Daily Use

SEPTEMBER MCMXVII

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The Pharmacology of Digitalis

IT SEEMS that every year sees digitalis more firmly planted at the head of the heart-tonics and as one of the most valuable and widely utilized drugs in the hands of the clinician. There is a constant stream of articles pouring into the journals, detailing investigations of this plant in the laboratories; and these are enough to bewilder the reader. Each one knocks down one or more of the pillars of our beliefs, contradicts the axioms of our science, demolishes the foundations of our clinical applications.

Not long ago, we learned that the traditionally preferred second-year's growths of the leaves are not any better than those of the first year; that moldy leaves are better than those preserved from moisture; that the leaves, instead of losing strength on being kept, really gain, if anything; that between the water-soluble principles contained in the infusion and the alcohol-soluble principles in the tincture there is little if any difference.

Then, as to the active principles, we were comfortably settled in our minds on these four, digitonin, a sedative-relaxant, acting almost immediately and spent within an hour; digitalein, a cardiac tonic, with scarecly any vasoconstrictive power, acting within an hour and spent within four hours; digitalin a cardiotonic and vasoconstrictor, action beginning within two hours and lasting for eight or more; and digitoxin, a cardiotonic and tremendously powerful vasoconstrictor, acting inside of four or eight hours and action lasting for weeks. However, each new investigator discovers one or more new principles and separates our four into varying mixtures.

Taking these four principles, as accepted and taught to exist in various quantities and proportions in different samples of the leaves, we found in them a reasonable explanation of the inharmony between the findings of different observers as to the precise action and applications of the drug. Then take the underlying determination of the profession to oppose the extension of active principle therapeutics in favor of the galenics whenever possible and to admit the former only when, and so far as, it proves unavoidable, and we have the key to a good deal of the recent jumble. There are two good rules to follow: one is, to hold our minds ever open to the reception of new knowledge, no matter how revolutionary it may seem; the other is, to hold fast to what we know of ourselves and to refuse to be swept from our moorings by

the tides of prevailing sentiment; to insist that to us at least our own clinical observations have a value and that, when other investigations seem to negative our own, the others are not necessarily or wholly correct.

The current abstracts of the late A. M. A., meeting include several on digitalis. For a full discussion of these features, we really ought to wait for publication of the complete papers; still, they will bear some examination as now presented.

White and Morris treated a series of cardiac cases with digitalis, using a preparation made by Eggleston's method and standardized, its activity being measured in cat-units. Polygraphic, electrocardiographic, and clinical studies were utilized for controlling the results. One-half the full dose was administered, one-fourth in from four to six hours, and the last fourth in two equal parts at further intervals of four to six hours. Pronounced digitalis action was evidenced in eighteen or twenty hours after the first dose.

The following observations were made: (1) prompt action, seldom nausea, no ill effects; (2) no difference between first- and second-year's growth of leaves; (3) home-grown plants fully equal to the best imported; (4) digitalis lutea highly active and less nauseant than the purpurea.

Cary Eggleston, in his paper, denies the vasoconstricting power of digitalis and digitoxin, except in doses five to fifteen times greater than the lethal. The blood pressure was raised by digitalis but very slightly and in but a few instances. The changes in this respect following digitalis he attributes to the improvement in the circulation through the tissues in general.

Many years ago, we treated a woman for post-abortion hemorrhage. We gave her ergot until the legs turned white and cold, and yet, the blood dripped from the uterus. Then we necessarily stopped that drug and gave her digitalis instead, whereupon the hemorrhage soon ceased. Following this we gave but little ergot in such cases but went at once to the digitalis; and this never failed to stop the bleeding promptly. We are not now able to associate this result with any supposed influence of the drug upon the nutrition of the heart or improvement of the general circulation. Then we saw in consultations a case in which a man with a valvular defect was given full doses of powdered digitalis. The first day there was manifest improvement; then he was worse, and the larger the doses of digitalis, the worse he grew, until he died. Our study of this case led us to believe that the cardiac toning was less powerful than the vasoconstriction and that the heart's power was exhausted in trying to force the blood past a tightly constricted orifice—the arterioles or capillaries being closed.

These conclusions served to explain similar cases occurring throughout years of practice, and we are not yet ready to give them up as erroneous. We prefer to believe that, even as digitalis has little evident action over a normal heart, so in such conditions as we describe it has an action differing from that observed in the cases studied by the men quoted. We held out for raw milk and raw fruit-juices many a year, waiting until the discovery of the vitamines vindicated our belief, and we shall adhere to our views on the vasoconstrictive powers of digitalis, and especially of digitoxin, in cases demanding this remedy, until we go dead or are confirmed by subsequent discoveries.

More yet. In *The New York Medical Journal* quoted, R. F. Ives also contributes a paper on digitalis. Beginning with the statement that "the drug stands enthroned among all known plants today as specifically the agent of greatest virtue to the hopeful cardiopath," he proceeds to demolish the fear of digitalis (which Peter asserted was the beginning of wisdom in dealing with the heart), as well as the view that this remedy is suitable only for certain cardiac conditions and not simply one "good for the heart."

Ives skips the principles, names only European preparations, besides the official favorite, the tincture, looks upon gastric irritation as the one sign of approaching toxic effect, then says "it is said authoritatively by those who use it most that they have never seen the slightest danger arise from taking digitalis in the doses given above." Count this editorial writer here as one exception—he has seen a man drop dead within an hour after taking one dose of digitalis. The man's heart weighed 26 ounces.

Physiologically, Ives finds that digitalis acts upon the cardiac muscle, intrinsic cardiac nerves, and vagus center in the medulla; has some contractile action over the arterioles, contracting the splanchnic, but dilating the renal; slows the pulse and completes the diastole; checks discordant impulses from the auricle, by inhibiting the conducting bundle of His; increases cardiac nutrition, by forcing more blood through the coronaries. He then quotes Brunton's explanation of the diuretic action: it dilates renal vessels and increases pressure in the glomeruli, lessens the resistance of overfilled renal venous

radicles, directly stimulates the secreting cells, and increases the volume of blood and alters its composition by absorption of serum effused.

Ives agrees with Eggleston that no rise of blood pressure takes place under digitalis.

The indications for the drug are; auricular fibrillation and flutter, chronic myocarditis, cardiovascular renal disease with decompensation, and, in pneumonia where, as Cohn recently has shown, digitalis acts beneficially in the fever. "It should be used, therefore, positively in this disease to sustain the exhausted heart." Pretty close to the alkaloidists, who use digitalis to anticipate and prevent exhaustion of the heart.

His conclusions come close to the general applicability of digitalis in heart affections:

"1 Digitalis or one of its congeners is the drug par excellence in the treatment of the cardiovascular system.

"2. Its use should be governed by certain basic and well-defined laws.

"3. It should be used in doses administered for its clinical effect.

"4. Its beneficial action depends upon its power over the cardiac musculature, its regulative action over the auriculoventricular bundle of His, and upon the vagus.

"5. In therapeutical doses it does not cause any perceptible rise in the blood pressure.

"6. The hypertension of cardiovascular kidney disease does not contraindicate its use.

"7. It is specifically active in auricular fibrillation and flutter.

"8. It is very valuable in chronic myocardial affections, with or without recognizable dilatation.

"9. It is useful in the support of the heart in the acute toxemias.

"In brief, it is a drug of marvelous efficiency—but, it must be used with the greatest intelligence."

The state does not exist for the good of the individual, but the individual exists for the good of the state.—*Charles H. Mayo.* (Presidential Address, A. M. A.)

WOMEN TALK

According to a story printed in *The Journal of the Indiana State Medical Association*, a doctor confided to his wife his suspicion that a certain woman patient of his had syphilis. Thereupon friend wife imparted this startling bit of information to her next friend. Thence this news was passed along down the female line until in time it reached the husband of the suspected woman—who did not have syphilis at all—and the husband very properly thrashed the doctor. The doctor was lucky to get off so easily. Another doctor gave utterance to a similar discrediting diagnosis, and the woman's husband shot him dead.

We one time knew a doctor who, warned by sad experience, not only took particular pains not to talk to his wife about his patients, but conducted all correspondence with any of them from the hospital to keep her nose out of his and their affairs. A woman came to him for treatment for a rare form of nephritis; but his wife heard of the case and, as the doctor sometimes treated drug-habitués, she assumed that the lady was such a one and told this as a truth in such a way that the story got back to the home town. Now see what a train of evils followed: The lady was a teacher in certain lines—she lost her position. Her husband was discharged from an honorable post. He blamed this especially upon one man; soon after, this man's brother was a candidate for a very high position in politics—the aggrieved man went into the campaign against him and was a potent factor in his defeat. The destinies of a sovereign state were altered by the jealousy of a fool woman. Her husband was compelled to divorce her to get leave to earn his living.

It will be seen, therefore, that the injunction "don't tell your wife about your cases," is trite and unsatisfactory. Marry a woman who has sense enough to keep out of her husband's business, or else marry a woman doctor and let her be your full partner. She will understand the necessity of keeping a close mouth over the secrets entrusted to the firm. She will supply the need of a consultant better than any other possibly can. The feminine keenness of perception and instinctive grasp of a situation will help one out of many a difficulty where no mere man could have done as well.

In any event, do not marry a jealous woman. One poor fellow whom we knew was driven to drink and the gutter by his wife. Whenever any woman called on the doctor, the wife would walk up and down the hall in front of the office and after a few minutes knock at the door and in a perfectly audible voice ask what that hussy was doing in there so long.

Suppose one does have an office away from the home and keeps his practice entirely separate—how many matrons, head nurses, and office-girls have been hailed into court as corespondents!

No, there is no remedy for confirmed jealousy. Marry a woman of sense, of the

qualities a doctor's wife must have, or remain single. If you can not control your wife's tongue and she is ruining your practice, one or the other must be given up—wife or profession. Which?

This is strictly an individual matter, one that every man must settle in his own way, according to his own conscience. Possibly the best remedy would be a shingle—and whether the judge decided that a man had a right to spank his wife or that this gave her a legitimate claim for divorce, the result is a cure of the situation.

One can almost always count upon the roguery of rogues; but, the honesty of honest people often is wobbly.—*Dr. G. Linossier.*

PROFESSION AND BUSINESS

The code of ethics, common humanity, and the fraternal sentiment unite in inducing us to extend the courtesies of the profession to other physicians and their families. The doctor is entitled to call upon his nearest colleague for aid when suffering, and, while this does not imply that he can also call upon the busy city specialist hundreds of miles away, he generally does so, and nobody kicks. Besides, he may send us patients.

When it comes to a sanatorium, the matter is different. Here, profession is combined with business. We may be ever so willing to treat our brother gratuitously, but, are we also obliged to house, feed, and nurse him? These things involve a monetary outlay on our part that we may not be able to meet. The present writer once operated a sanatorium and at one time every patient in it was a physician. To bear the expense, simply was an impossibility. While the doctor may charge his services to professional courtesy, it is evident that the charges for care must be defrayed by the doctor-patient.

With this, the doctor surely is entitled to every care that would be given to any other patient; but, very often he is looked upon as a quasi charity object and is put off with neglect and indifference. Here is an instance:

A correspondent writes that he was afflicted with sciatic neuritis, for which he entered a sanatorium. The diagnosis was not positive, but the treatment was; for, he received 1-100 of a grain of hyoscine every hour for 24 doses; and, as this failed, he had a dram of sodium bromide every hour until he had taken 2200 grains. The result from this haphazard medication was one of those that have given materia medica a black eye. The next sanatorium that received him applied a treatment that he called an "electric cabinet and the Bible." That failure followed, should not be regarded as any detraction from the interest we all feel in the literary relics of the ancient Hebrews. The victim concludes: "I find very little professional courtesy shown doctors here by the men practicing in sanatoriums. They are after the dollar, and a sick physician does not get as much courtesy as does a layman."

On the other hand, a colleague who has had experience from the sanatorium side assures us that "physicians applying for treatment in a sanatorium are about the hardest, the most difficult, and the most ungrateful patients to deal with."

The present writer's experience divides these doctor-patients into two classes—those who paid their bills and those to whom he was asked to extend credit. In a number of years, not one of the former left the place without leaving us as a valued friend, whose subsequent visits found our door wide open and a warm welcome. The others—without a solitary exception, proved dishonest. Not one ever paid a dollar, but, instead, they sought to excuse their wrong by reviling the man who had trusted them. One or two even went to the extent of coming with most cunningly devised plans for swindling the man to whom they applied for aid and for credit—and did it, too; for, we never yet refused to hearken to such an appeal. Well, it is all for the best, and such things strengthen one's belief in a hereafter—of both sorts, the other one being necessary for such men, that time may finally make all things even.

In the case of our sciatic friend, there should have been a real diagnosis at the start. Sciatica may be the product of any one of a variety of causes, each requiring its own special treatment. Rectal examination may be necessary; the masseur may detect masses of exudate along the course of the nerve, the dispersal of which must be effected in order to cure; the hyperplasia of the neurilemma may occasion increase of bulk in the tissues occupying the sacrosciatic notch, with pinching, and this must be relieved mechanically. And so on. The empirical prescribing of drugs without any previous diagnosis does not commend itself as a justifiable course, although it may sometimes happen to afford relief. If this were the best that one could do, even with the advantages of a sanatorium, we should accept the surgeons'

dictum and drop medicinal therapeutics entirely.

Combine the dicta of two of the greatest teachers mankind has ever had:

Be kind to all that lives.
Be diligent in business.

I have always observed that vice is far less fragile than virtue.—*Dr. G. Linossier.*

WHAT ABOUT HOBBIES?

He was a typical wardheeler of the old style, one who for many years had carried out his boss's behests, slugged his enemies, intimidated election-judges, voted gangs of repeaters, and practiced all the arts by which the plans of a corrupt machine were carried out despite the will of the sound and sane majority. But, now he was old, his brain and his muscles were stiffening, and the younger element had grown impatient of his domination. So, he was slated for retirement. The "big boss" had made this plain to him in terms that left no chance of escape. However, as he watched the old man's face, he added: "There is a cottage for you in the new suburb, with an acre of ground, for which here are the title-deeds." The old man considered this a moment and then a gleam of hope lit up his face as he asked: "Could I keep chickens?"

A colleague came to me when on the verge of a mental breakdown. I inquired as to his likings—he had none except his practice, took no rest, no vacations, cared nothing for sport or amusement. Finally I asked how he spent Sunday—his eyes gave a spark of interest, and he said he was superintendent of the Sunday school. I instantly directed him to go to the Holy Land for a year's travel. Very soon he wrote me he had made up a small party for the trip; and he has had no return of the mental symptoms since this vacation, every minute of which he enjoyed.

Hobbies? The ancient idea of a hobby, dating from Sterne, has been that of something ridiculous, a lapse into weakness or an obsession. So, when a man insists upon bringing the conversation around to the descent of the American Indian from the ten lost tribes of Israel, we rightly term this his hobby. But, this is a mere vagary—the predilection usually looked upon as a hobby is something different. It is the unconscious, instinctive turning of the human mind away from the usual that has become monotonous, even unendurable, by iteration and repetition.

We get tired of anything—everything. Men tire of their office, their business, their associates, their homes. Women tire of seeing the same old face across the table, engrossed in the same old cares, eating mechanically with the same old inattention. Children get tired of being good—so do men—possibly women. The reason why so many men who have distinguished themselves in various vocations requiring more than the average of brains take to Spiritualism and similar divagations is, that these are so diametrically different from the channels in which their minds moved.

Looked at in this sense, hobbies are things to be discouraged as long as the battle of life still is being fought. A man's lifework must engross him and occupy every moment, every power of which he is possessed, until success has been won. Side issues must be avoided, however enticing the flowery path may appear. Success with a "side line" rarely pays for the energies subtracted from the main purpose. A dollar won on the side is simply a dollar; one won in the regular line is a link in an endless chain. Most lost battles are lost because the defeated party quit before the other did. The great winnings are made by the men who select their object with care and then plug away at it, refusing to be swerved from their chosen path by any inducement whatsoever until they have won.

The time for indulgence in a hobby is after one has done his work, made his pile, and is ready to quit. The office has grown dreary, the duties tiresome, the days tedious. One has done the same old things over and over again, until actually a sore spot is produced in the brain whenever he begins on the grind again. What a relief, then, if he has something else, that he has persistently kept in the background of his thoughts, but, which he now feels he may take time to do. With what a relish he turns to it! What a new zest life takes on! He seems to throw off years, his step quickens, his face brightens, and every acquaintance remarks on "how young he is looking."

We, personally, have so many of these hobbies that we never could list all of them. They are varied endlessly. We want to do a whole lot of reading, including all the Greek and Latin classics, all the modern fiction, a number of the standards we have overlooked. We want to cruise through the West Indies and up the Amazon; to travel over the United States in an automobile; to excavate a ruined city in Central America where we suspect the existence of a prehistoric but not exhausted gold mine; to go

back to an antarctic island where one time we picked up a few little diamonds; to establish a semitropic home where the seabreezes keep one cool in summer and warm in winter; where we can raise every bird, beast, and fish useful, ornamental or salable, from children to frogs; to cultivate every fruit and flower and vegetable known, including *all* the plants on the experimental list of the Department of Agriculture, and all that might be consigned to us by appreciative readers of this wideflung journal. We might supply all the laboratories in the land with cavies at greatly reduced prices; develop a breed of hens that will lay 365 eggs a year; start coffee culture in Texas and an Angora-goat farm in Michigan, with a woolen industry attached that will produce rugs, blankets, and, eventually, underwear to rival that of Jaeger. Yes, and at a very remote corner of the ranch, there is to be a skunk-farm, to which we should prescribe resort by every pessimist and pacifist who applies for advice.

Here we stop. We have said enough to indicate the wide diversity of our own hobbies, and we presume others have like diverse tastes. Our main contention is, that there is a time when hobbies are wrong, as there is a time when they are right.

MORE ABOUT HOBBIES

Another member of the editorial staff, to whose attention the manuscript of the preceding editorial article came, wants to say just a few words, partly in order to voice a different opinion. Our esteemed colleague asserts that there is a time when hobbies are wrong and a time when they are right. Granted. But, when he says that a man engaged in the fight of life, in the exercise of his life's work and in the laying up of those treasures that "moth and rust doth corrupt" —only, unfortunately there is not enough, usually, for "moth and rust," nor do they get a chance at it—that a man engaged in this work should not deviate at all, for the sake of indulging in hobbies, the present writer has a strong conviction to the contrary.

Even in the strenuous, conscientious, and constant pursuits of daily life and with the most single-minded and honest devotion to one's work, a man needs change and diversion. While it is incumbent upon him to pay close attention to his principal and main work, there is a demonstrated necessity for periods of rest, for temporary change of occupation, for something different. This change and diversion needs to take up only an occasional hour or a chance half-holiday; yet, during these brief breathing-spells of leisure, devotion to a hobby is more beneficial than that sort of rest that consists merely in doing nothing. The writer of the preceding editorial has often urged us—rightly—to "go fishing" at stated intervals, meaning by "fishing" all that may be included in the temporary letup of the strenuous workaday life. What else is this but the periodical devotion to a hobby? The half-hour, of an evening, after the last patient is dismissed, the last doubtful case thought over, the last medical article read, the last charge entered or credit recorded, that half hour of rest before retiring may fittingly be given to reading, to music, to looking at etchings, pictures, bookplates, to arranging one's mounted plants or moths or shells or coins—in short, it may be devoted to a hobby, with the distinct benefit accruing to mind and body from a period of rest.

A hobby, in the case of the busy man, never should encroach upon his lifework; but, when the latter is accomplished and the hobby is taken up in good earnest, it becomes a "lifework" in itself—and then it may pall. It is the hobby to which an odd half hour, an occasional half day is devoted, that gives new zest to life and that makes the actual work so enjoyable and so productive. Constant pegging away at the same old thing, in the same old round of duty, with never a letup, makes for poor work; a sensible intermingling of much work and a little play is productive of better quality in the work, of better mental and physical stamina, of better perseverance, and of greater joy of living.

It is the modern mistake to confound empiricism with tradition and age with fogyism; for, the physician of 50 years ago held a far higher place in the community and was far more respected and loved by the laity than is the physician of today.—*Edmond J. Melville.*

SOLANINE VERSUS THE BROMIDES

Before the days of antinarcotic legislation, recourse was had almost instinctively to opium and its alkaloids, not alone in cases in which pain was a paramount symptom, but also in instances in which an antispasmodic effect was desired—quite oblivious to the fact that there are many drugs less objectionable than opium in their distant effects or that some of its alkaloids even exert the reverse of an antispasmodic action. Among other good things (ignoring some bad ones), the

antinarcotic laws now in force have acted as a stimulus toward causing us to study the other available drugs of our materia medica to seek to discover substitutes for those remedies the routine prescribing of which is attended by more or less difficulty, because of legal restrictions.

In this connection, one curious fact may be alluded to. Irrespective of all disadvantages and inconveniences associated with the use of the bromides and despite the wholesale condemnation being meted out to them, few physicians make an attempt to find substitutes for these rather crude remedies, which must be prescribed in such enormous doses to be effective and the continued use of which carries with it so many disagreeable sequels.

It is, at times, with something of astonishment that "new" drugs are being "discovered"—one is tempted to say—although, as a matter of fact, these "new" drugs have had a place in the Pharmacopeia for many, many years, have been more or less familiar to us, but have been neglected, simply because it was so much more convenient to prescribe the more familiar opiates and bromides. And one among these new-old drugs is solanine, the active principle of solanum carolinense, as well as a constituent of solanum tuberosum and several other solaneæ.

An editorial in *The Medical World* for December last calls renewed attention to this exceedingly useful alkaloid and enumerates some of its leading properties and applications. Thus, solanine exerts an anesthetic influence over the extremities of the pulmonary plexus, lessening the sensibility of the bronchial mucosa and slowing respiration. The pulse at first is slowed by small doses, but, later, or under larger ones, it is accelerated. The temperature has been known to fall 5 degrees after full doses. Von Schroff found that 3-grain doses of solanine will give rise to yawning, dizziness, stupor, somnolency (but not sleep), salivation, extreme weakness, difficult respiration, and a small and rapid pulse.

The therapeutic applications of solanine may fairly be deduced from its physiologic effects. In general, this alkaloid very properly may replace the bromides in their entire field of application. Geneuil found that in some instances solanine was capable of replacing morphine in relieving neuralgia, gastralgia, and rheumatism. Similarly Sarda observed its analgesic influence in diseases of the central nervous system, while Fronmueller found this true for agrypnia. Demos obtained anodyne effects from solanine in gastralgia, alcoholic gastritis, gastric ulcer and cancer. Ckarus and Capparoni found this alkaloid effective in combating pertussis and various forms of asthma. Others praise it for sciatica, myalgia, gout, cystitis, bronchitis, pulmonary spasm and irritations in general, ataxia, prurigo, and to allay the vomiting of pregnancy—the latter use recommended by the late Professor Shoemaker.

For controlling epilepsy, solanine has been substituted for the bromides, with some success, 1 grain of the alkaloid replacing about 1 dram of the bromine salts. However, the alkaloid should not be pushed recklessly and the physiologic symptoms described above should indicate its withdrawal or at least moderation of the dosage. From 1-24 to 1-6 grain should constitute a dose, this to be repeated every hour until the evidences of full action become manifest. The dosage thus ascertained may be continued as required.

Since the green tubers of the potato are the most economical source of supply of this drug, its present high price is due largely to the slight demand for it; consequently, if this valuable antispasmodic remedy were to come into more common use, it probably would very soon be available at a price not any higher than that commanded by drugs having similar indications and uses.

I must maintain that animal experimentation tells only a portion of the story of drug efficacy; though absolutely necessary in the process of drug assays, its results should not be convincing unless they have been confirmed by similar experiments on human beings. There is quite often a wide difference between their conclusions and which leads to divergent opinions among physicians.—*Dr. Th. E. Satterthwaite.*

HEROIN SHOULD BE ABOLISHED

When heroin was first introduced, in 1898, its claim to preference over other opium derivatives was based upon the fact that it is free from constipating properties, is active in smaller doses than morphine, and does not affect the blood pressure. Its main indication was derived from its distinctly sedative action upon the respiration. As a result, heroin was accepted as a remedy of selection for the irritating cough of pulmonary phthisis, for dyspnea, and for similar conditions. It was claimed that it does not induce habituation, and, even, that the drug might be usefully employed for the treatment of morphine-addiction. Indeed, the assertion that heroin does not lead to addiction still is accepted by many practitioners.

It was not long, however, before reports were made public as to the relatively con-

siderable toxicity of heroin as compared with morphine, and also its depressing action upon the respiration was pointed out as a great disadvantage. The use of the drug in the treatment of morphine-addiction was deprecated, more particularly by French physicians, who showed that heroin might give rise to a far more serious form of addiction than does morphine. As long ago as 1906, Doctor Cecil Kent Austin, of Paris, asserted that, in all probability, the drug might as well be struck out of the pharmacopeias without being missed.

More recently, communications on the dangers of heroin have become more frequent. In a brief comment in *American Medicine*, a few years ago, Dr. Solomon Solis Cohen deprecated the opinion prevailing among physicians that this drug is a harmless substitute for morphine, asserting that it embodies all the dangers of the morphine salts in general and additional dangers of its own. In 1911, H. Brooks and H. R. Mixell (*N. Y. State Jour. of Med.*, Aug., 1911) called attention to the growing frequency of heroin-addiction. Reasoning from their observations in two cases, they concluded that the immediate habit is broken off with much less suffering and greater ease than is morphinism and cocainism; this, however, has since been shown to be an error, the contrary having been clearly established.

In 1912, John Phillipps (*Jour. Amer. Med. Asso.*, Dec. 14, 1912) called attention to the extensive use of heroin by means of "snuffing," especially in the "tenderloin" districts of large cities, and the same journal, in its December 21, 1912, issue, points out editorially that heroin and its hydrochloride have become sufficiently conspicuous as habit-forming drugs to awaken the thinking public to the deplorable results for which they may become responsible. The increasing danger is shown by the fact that, according to C. B. Farr (*N. Y. Med. Jour.*, May 1, 1915) 86 patients addicted to heroin were admitted to the Philadelphia General Hospital in the first 68 days of 1915, while in 1911 there had been but one admission from this cause. Finally, at a meeting of a committee on drug-addiction of the National Committee on Prisons (*Jour. Amer. Med. Asso.*, Nov. 11, 1917, p. 1456), discussion revealed that heroin is the favorite drug among young addicts and those of the first decades of life.

In view of these facts, the committee passed resolutions to the effect that, since heroin is not a drug of sufficient value to preclude its being replaced by other drugs or measures that do not tend to give rise to and maintain vice and crime, it is recommended that federal legislation be adopted to prevent the importation into, and the manufacture and sale of this dangerous, habit-forming drug in the United States. Since then, this resolution has been acted upon by the United States Public Health Service, which has discarded heroin completely and declared the intention of promoting the legislative solution of the problem. The action of the Public Health Service is supported by the former surgeon-general of the navy, Dr. Charles F. Stokes (*Med. Rec.*, June 9, 1917; reprinted in CLINICAL MEDICINE for Aug., 1917), who declared in unmistakable terms that heroin should be abolished.

Inasmuch as it has been established beyond the possibility of doubt that heroin possesses all the disadvantages of morphine and codeine, and, in addition, several of its own, while it cannot lay claim to any redeeming favorable action that would render it superior to those two drugs; and, since the danger of heroin-addiction is increasing to an alarming extent, it follows that the best interests of the public would be served by the unconditional condemnation of the drug. In accordance with the resolution of the National Committee on Prisons and the action of the Public Health Service, legislative measures should be taken speedily to eliminate this drug from the market and to prohibit its manufacture and importation.

My experience is, that a good cook and housewife is almoft as essential to the treatment of a case of typhoid fever as the physician.—*Charles Spencer Williamson*, in "Medical Clinics of Chicago."

TIME TO QUIT

The world is neither optimistic nor pessimistic—it is inexorable. Effect follows cause, and the rain falls alike on the just and the unjust. Supply answers demand, whether it be of wheat, munitions, brains or prostitutes. For every one of our acts and for every factor of our mental makeup, we shall surely give account—not at the Great Day or to any deity whatsoever, but, to ourselves. When we come to sum our lives and strike the balance between successes and failures, there will be no items omitted.

Men vary over wide limits as to their capability of acquiring and assimilating knowledge. This capacity may be represented by a gallon, a bushel or a ton, or it may be considerably nearer the dimensions of a thimble; but, it is there, for every last

one of us. So, as age comes apace, we find that saturation has supervened and new knowledge can only with difficulty be wedged in the memory-cells, these being gorged. Herein lies the greatest obstacle in obtaining credence for the new things especially if they be so revolutionary as to be difficultly, if at all, assimilable with the preexistent system of belief. The most significant illustration of this is, that, when Harvey announced the circulation of the blood, not a man in England over forty-five years of age accepted it.

We should, surely, dislike to admit that we have learned nothing since we were 45 or even 55, possibly 65. The older we get, the more convinced are we that there is a very great deal that we do not know—if that is any sign. But, we are sadly conscious of the increasing difficulty we experience in acquiring anything that is entirely new and foreign to our life-work. For instance, we let the boy run the automobile, not bothering ourselves to learn the comparatively simple manner of operating it. We hear him talking about aeroplanes, on which he is preparing an essay for school, but, we do not make the least effort to comprehend the pesky critters. As to autos and motor boats, we fully agree with the Indian who, after a lucid exposition, when asked if there was anything he did not understand, replied that he did not know why they run without horses.

But, that this generality applies only to matters quite foreign to our usual work, is shown by the quickness with which very many medical men far past the given age of 45 years recognized and took up the use of the active principles. Their clinical experiences qualified them to appreciate the advantages of these agents in a way that the recent graduate, be he ever so well versed in anatomy and pathology, can not begin to comprehend. When one has struggled along for many years with miserable drugs, variable and uncertain in strength and actual effects, he seizes with gratitude the certainties placed in his hands. New powers are his, new possibilities open before him, and he becomes enthusiastic over his new treasures.

For all that, there comes a time when the whole business grows irksome. The fount of sympathy runs dry. Mind and body lag, and fail to respond to calls with alacrity. Ordinary clinical cases fail to incite interest; extraordinary ones get to be a bore; and life becomes a tedious matter. A sort of psychic "writer's cramp" affects the mental faculties. As physician, he has lived his life out. Instead of being panicky over Pat Umpley's accident, one feels that the fellow had better die than go on living as he does.

Now let the doctor change completely his occupation and go back to Mother Earth, and he will realize the profound truth back of the Antæus fable. Let him give up medicine and turn to whatever it may be that his soul loveth, whatever he longs to do and dreams of doing, if only he could get away from the bonds that bind him to the juggernaut wheels of medical duty. But—

It is related that men who have been inmates of prison for many years, when finally and unexpectedly released, after a plunge into the outside world, find themselves unable to live in freedom, and, so, return to their cells. When doctorism has become an integral part of one's being, he gets like that.

Why should this be so? Medicine has radically changed since we left our alma mater forty-odd years ago. Medicine is a new science—new in its pathologic bases, new in its methods of meeting the newly arranged indications. Newly fledged men, full of the new science, adept in the new art, alert with the mobility and instinct with the energy of youth are at hand, ready and eager to take up the burdens. We find it bewildering to attempt an adjustment; despite our best intentions.

The world has slid away from us. Our old patients are surely attracted by the novelty, blinded by the assurance that all this spells progress; and, we find our clients dwindling. A young wife, whose endometritis we had been treating, that she might become a mother, as she ardently desired, has gone to an "abdominal surgeon", who removed her ovaries—and she is dead. How this was to bring about pregnancy and motherhood, God knows—or, perhaps we should say, the devil. But, this is just one instance of the difficulty we experience in our adjustment to present conditions. Thank God we don't have to.

Do you take to Rhode Island reds or to orpingtons? Is it to be magnolia figs or satsuma oranges? Sure as pigs is pigs there must be money in raising guinea-pigs, when the colleges pay one fifty a piece and can not get enough at that. Which looks best to you—Cuzner's Florida, Secrest's Idaho, Hollmann's Honduras?

Humanity is awakening to the fact that sickness, in a large percentage of cases, is an error of body and mind.—*Edwin F. Bowers.*

AS TO OSTEOMYELITIS

Every last one of us makes mistakes in diagnosis—and the ones the recollection of

which makes our ears tingle, the ones we do not tell about at the meeting of the Society are those in which there was scarcely any difficulty in detecting the true malady—only we did not "happen to think" of that.

A youthful practitioner was called to see a child with a bad knee. He saw in it a case of rheumatism and treated it accordingly; and, so, the time for effective intervention sped and the child lost most of his leg-bones from osteomyelitis. In justice to the young doctor, he had never seen such a case and possibly never heard of the malady. They have had some cases down in Texas, and W. B. Thorning presents a paper on this affection, which appears in *The Texas State Journal of Medicine* for April. Here is his case:

A girl, aged five years, had had tonsillitis three weeks previously and then sprained an ankle, slightly. That night, she awoke crying with pain in the ankle. This was followed by fever, delirium, considerable swelling and no relief from local applications. It was diagnosed as rheumatism, and some moderating followed the use of salicylates. On the fourth day, fluctuation was detected and an incision evacuated pus. A skiagraph two days later showed the entire shaft of the tibia to be necrosed. It was then too late to do aught but await the processes of nature.

The designation of rheumatism should be limited to those cases usually denominated rheumatic fever; acute infections resulting in fever, sweating, multiple arthritis, and cardiac involvements. To this, there might have been added, as frequent, an antecedent tonsillitis. The malady is now generally attributed to a streptococcus invasion.

Gonorrheal arthritis has its own history and evidences. Inflammations attacking a single joint usually are due to metastasis from a pus focus, "somewhere in the body." Chronic affections do not present difficulties.

Doctor Thorning is skeptic as to the possibility of an "idiopathic" form. The organism most frequently found is the staphylococcus pyogenes aureus, but mixed infections are fairly common—streptococcus, bacillus coli, bacillus typhosus, and pneumococcus. Very rarely the morbific agent is the tubercle-bacillus.

Looking on osteomyelitis as always hematogenous, we seek the primary cause in some focus elsewhere in the body. The outbreak may be, and usually is, preceded by a tonsillitis, bronchitis, influenza or even an ingrowing toe-nail. The "spontaneous" cases are those in which we have not discovered this primary focus. Slight trauma suffices to lower the vital resistance in a circumscribed area, generally the epiphyses and metaphyses of long bones. Thorning thinks that a septic embolus lodged in the end-artery explains the situation amply. The resultant abscess follows the lines of least resistance, rapidly extending through the marrow, then by the pulp-canals to the periosteum, which may be widely dissected from the bone before the cellular tissues beneath the skin are penetrated. The death of the bone thus cut off from its blood supply follows quickly.

Acute osteomyelitis is then merely an abscess circumscribed in bone. The treatment is simple and undebatable—the earliest possible evacuation.

Since the affection is most frequently mistaken for rheumatism, the differental diagnosis should be clearly comprehended.

The pain is severe in both, temperature high, tenderness marked, and the leukocyte count increased. It is not common to find more than one locality affected by osteomyelitis, but there are exceptions. The white blood-cells number 25,000 to 40,000; in rheumatism, the average is lower. Osteomyelitis usually starts in the ends of the bones involved. The onset of the pain usually is abrupt, and it increases until the cellular tissue has been penetrated. In rheumatism, the pain is less severe at the onset, and the lesion is in the joint. In osteomyelitis, it is above or below it. Palpation detects the tense or fluctuating capsule of rheumatism, the tenderness is greatest directly over the joint line, and the superficial tenderness is equal to the deeper. In osteomyelitis, early palpation reveals nothing; later, as the pus approaches the surface, the tenderness is most acute where the pointing occurs. But, while superficial tenderness is slight, deep, firm pressure induces a sickening, excruciating pain as the soft structures are pressed to the bone. Manipulating a rheumatic joint increases the pain, while immobilization brings relief; but not in osteomyelitis.

In the discussion, J. E. Thompson says that the diagnosis usually was very easy—the acute onset, sudden pain and high fever, with tenderness and edema. But, in staphylococcus-infections, the case may be chronic from the start and develop "insidiously" (says our contemporary, although we are sure this accomplished clinician never used such a term), reaching the acme in five or six days. In all cases, the operation must not be concluded until the bone cavity has been entered.

Leading Articles

Luargol ("102"), The New Remedy for Syphilis

By B. Sherwood-Dunn, M. D., Paris, France

Officier de l'Académie; Membre Correspondant de la Société Obstétrique et Gynécologique de Paris; Physician to the Cochin Hospital; Surgeon-Colonel to Molitor Hospital, Paris

EDITORIAL COMMENT.—Even if the existing difficulties in securing sufficient quantities of salvarsan ("606") had not made their appearance, the discovery of an improved arsenobenzol, by Professor Danysz, would arouse our interest. The present description of luargol, this new remedy, speaks well for its effectiveness.

HAVING returned to Paris, after an absence of many years, in order to enter the army-hospital service, I was consulted by an American gentleman, at my quarters, regarding an ulcer that did not yield to the ordinary care and treatment which he gave it.

The sore looked suspicious, still, its situation on the foot as well as the patient's circumstances caused me to reserve judgment. However, the ulcer did not yield, while cauterization increased its virulent appearance. By and by another sore appeared on the thigh, also a marked roseola on the neck, and then I learned that sixteen years before the man had contracted syphilis and that this had advanced to the tertiary stage before he took treatment, which consisted in the mercurial course and, finally, a course of salvarsan. All evidence of the disease disappeared and a Wassermann test made in 1908 gave a negative reaction. No more signs of lues made their appearance until in March, 1916, shortly after he came to Europe, when the ulcer spoken of broke out.

Not long before, I had read in a newspaper of a mémoire read before the Academy of Sciences describing a new remedy for syphilis discovered by Dr. M. J. Danysz of the Pasteur Institute and named by him Luargol or "No. 102." Writing Doctor Danysz, the latter at once placed at my disposal all of the as yet meagre data in his possession and also he introduced me to the clinic of Dr. L. Fournier, at the Cochin Hospital, and there I observed the treatment in practice and could study a considerable number of patients, all of whom were said to show favorable results from the treatment. In consequence, I decided to try this new remedy on my own patient.

What Luargol Did

This patient of mine received his first injection of 10 mils (Cc.) of luargol at 8 oclock in the evening and returned to his hotel and went to bed, having eaten nothing since lunch. The next morning he appeared at breakfast as usual, having suffered no inconvenience from the injection barring, possibly, a very slight rise in temperature. On the third day he received a second injection of 10 mils, as before, without experiencing any reaction.

Then, on the day following the second injection, the borders of the extensive syphilides on the hip lost their rose color and all the surface, excepting the two large central ulcers, was dry. The ulcer on the foot was dry and covered with a film. The roseola on the neck lost its irritated appearance and the few papules were dry.

Meantime having removed to another hotel, I did not see the patient for two weeks, and then the roseola on the neck and the patches on the face were more irritated again. The man confessed that he had "been on a toot," to use his expression, but asserted that he had taken his treatment regularly. Thereupon writing to the doctor in whose hands I had placed the patient I received the following letter: "The negligent manner in which Mr. X. has taken his injections renders any observations on my part of little value. He has had only four injections and at irregular intervals, while his habits militate against possible good result." However, the early

positive evidence of benefit in this case persuaded me to put myself in touch with those employing the luargol, in order to determine for myself its claim to superiority over salvarsan.

Luargol is the sulphate of argento-antimoniated dioxydiaminoarsenobenzol; the exact constitutional formula has not as yet been definitely determined, however, owing to its complex nature.

The addition of the silver salt to the arsenobenzol adds to the antiseptic properties of the latter.

Luargol to Salvarsan

Doctor Danysz has demonstrated by a series of experiments[1] that the bromide of silver is more active in combination than the chloride or nitrate and less toxic than the iodide. Also, by a further series of experiments[2] he demonstrated the superior efficacy of antimony, in combination, over arsenic.

In the treatment of those animals to whom the same dose can be given as to man, he also has shown that in the period of incubation arsenobenzol, or arsenophenylglycin, is equally efficacious as luargol, while during the secondary stage the arsenobenzol cures only a certain proportion, and that in the tertiary stage arsenobenzol and atoxyl produce no appreciable effect, although luargol produces a certain and sure cure.

After a series of studies on the antiseptic action of different metallic salts upon the serum of the blood and specific serums, Doctor Danysz eventually became convinced of the superiority of the salts of silver over all others as microbicides, with a minimum of toxicity or abnormal reaction.

Orfila gave to dogs 4.38 Grams (1 dram), daily for four days, of nitrate of silver, in pill form, without observing any evil effects.

Charcot, who at the same time as Vulpian, Cruveilhier, and others made many experiments as to the physiologic and therapeutic action of the silver salts upon man, wrote as his conclusion: "The chief fact of our observations is, the tolerance of the human economy for this medicinal agent."[3]

It was after many tedious experiments that Doctor Danysz, finally settled upon the combination of dioxydiaminoarsenobenzol with silver as yielding the best results.

Some Animal-Experiments

In tests made upon rabbits experimentally infected, the spirillum of the chancre disappeared in twenty-four hours after the first injection of 2 to 3 mg. for each kilogram in weight.

In man, the spirillum of the chancre and of mucous patches disappeared in twenty-four hours after the first injection of 0.10 to 0.15 ctg.; a result not obtained by the injection of much stronger doses of arsenobenzol. Also a tolerance is shown for the luargol where the other arsenical preparations are not tolerated.

Report of a Hospital-Staff

In a report, presented by Professor Laveran[4] on the experimental use of luargol by Doctors Fournier, Renalut, and Guénot, in their hospital service, the following points were emphasized.

"The bromoargentoantimonial product of Doctor Danysz, named by him '102,' has proven a therapeutic remedy superior to all other arsenical agents in its curative action in syphilis. It manifests its therapeutic action in very small doses. We have treated more than 500 cases of syphilis in our hospital service, nearly all either in the first or second stage. The injections were made every three or four days, beginning with a dose of 10 or 15 centigrams, increasing progressively to 30 or 35 centigrams, in 6 or 7 injections, making a total of 1.2 to 1.5 Grams in each case.

"The first intravenous injection ordinarily is followed by a febrile reaction, differing in degree in different subjects, but without headache, gastrointestinal symptoms or other disagreeable result. The subsequent injections produce no appreciable reaction. In two or three cases out of the total mentioned, there was observed, on the day following the injection, an eruption between the toes or an erythema, resembling scarlatina, accompanied by a moderate fever, and which disappeared at the end of two or three days. These are the only accidents we have to record.

"The action of the '102' compares favorably with that of arsenobenzol given in doses two or three times stronger; to wit: Disappearance of the spirilla in twenty-four hours after the first injection. Rapidity of cure of primary and secondary phenomena. Remarkable amelioration in the general condition of the patient. Equally efficacious results in the tertiary stage—subcutaneous, gummata, gummous periostitis, and so on. The response to Wassermann tests varies as with the arsenobenzol, and even when the test is negative the symptoms may reappear, a renewal of the treatment thus being called for.

"The résumé of our experience is, that the remedy named '102' by Danysz, arsen-

[1] Danysz, *Ann. de l'Inst. Pasteur*, T. 28, No. 3.
[2] *Compt. Rend. de l'Acad. d. Sci.*, Oct. 20, 1913; Jan. 19, 1914; April 24, 1914.
[3] Charcot and Ball, "Encyclopédie Médicale" par A. Dechambre, T. VII, p. 57.
[4] *Compt. Rend. de l'Acad. d. Sci.*, T. 161, p. 685, 1915.

ico-bromo-argento-antimony, gives very favorable results in the treatment of syphilis. That the results are obtained in doses much less than those of arsenobenzol, with a markedly diminished reaction and devoid of painful results."

"For all of these reasons, the '102' represents a marked advance in the treatment of syphilis."

Practically the same conclusions were arrived at by Doctor Raspail in his report to the military authorities[5] on 50 cases treated by him in the military hospital of Val-de-Grâce, as follows:

(1) The stability of the preparation, which may be kept for several hours, permits of making up a sufficient quantity to treat a large number of patients. (2) The simplicity of the treatment, requiring no complicated apparatus. (3) The benignity of the treatment, which produces only a passing and uncertain reaction and devoid of all grave symptoms or complications. (4) The rapidity of the treatment, in that it calls for only one-day intervals between injections. (5) Its remarkable efficacy, the first, second, and third stages yielding in a few days under the influence of doses much smaller than those needed of salvarsan or neosalvarsan. (6) In 80 out of 100 cases in which had been employed from 1 Gram to 1.20 Gram of "102", the blood from one to two months after the treatment gave a negative Wassermann reaction.

Several Case Reports

In his report to the Pasteur Institute, on March, 1914, Doctor Danysz cites a case, reported by Doctor Fournier, admitted to the hospital August 1, 1913. The man had had a syphilitic chancre of the prepuce, which had healed in three months, with a marked cicatrix. There now were, an adenitis, a roseola, and mucous patches. The Wassermann reaction was positive. This man received, from August 4 to 13, three injections of salvarsan of 50 centigrams. On August 14, amelioration was noticeable. On September 15, a chancre-form ulceration and ulcer appeared at the site of the original chancre at the border of the meatus. On September 25, the borders of the ulcers had become clean. Injections of 50 ctg. of salvarsan were given. The Wasserman reaction was slightly less marked. On October 24, the chancre was unchanged. Wassermann reaction, positive. On November 5, the chancre was improved but not cured. Received an injection of 50 ctg. of salvarsan. January 4: Ulcer broke out on the lower limb. Incomplete cicatrization of the chancre. Wassermann reaction, positive. January 8: In addition to the ulcer of the leg, three other ulcers had appeared, resembling primary chancres. January 10: Injection of 18 ctg. of luargol. January 13: Manifest amelioration of all lesions. January 13 to 20: Three injections of 20 ctg. each of luargol. January 20: All the lesions have cicatrized.

This case is of particular interest, because of the prolonged resistance to the salvarsan and the decided amelioration after the first injection of luargol.

The following report made to the military authorities by Doctors Dalimier and Levy-Franckel, adds testimony of considerable value in support of the evidence of the superiority of this new remedy. They say:

"The treatment of the contagious and grave accidents of syphilis possesses more than ordinary interest, because of the special conditions surrounding us during this war. We must seek to render, in the shortest time possible and with the minimum of risk, the condition of the patient noncontagious and restore him as an effective fighting unit. To secure these results, in the service confided to us by the Medical Inspector General Nimier, we have employed the "102" of Danysz in 22 cases, and our experience confirms the conclusions arrived at by Renault, Fournier, and Guénot in a report to the Academy of Sciences. In testing this treatment, we have selected the abnormal forms, particularly rebellious and grave ones, with results as follows: "Primary period: Three phagadenic chancres, large, one having attained the size of the palm of the hand. Cicatrization in fifteen days. Dose for each patient, 1 Gram.

"One gangrenous chancre, with edema of the penis, black-bordered ulceration, which had perforated the prepuce, with strongly fetid odor. (See detailed cases.) Cicatrization in one week, after 0.60 Gram of "102". Total amount administered before discharge of the patient, 1.20 Gram.

"Secondary period: Ulcerous syphilides of the penis and thighs, uninfluenced by gray oil. Cured in twelve days, after administration of 0.40 Gram of luargol.

"Tertiary period: Two malignant cases. One ulcerated gumma of the sternomastoid, of the size of a mandarine orange, appeared nine months after the chancre. Cured in eleven days. Total dose, 0.90 Gram.

[*To be concluded.*]

[5] *Compt. Rend. aux Autorit. Milit.*, T. 161, p. 685.

The Surgeon's Share in the Winning of Battles

By Gustavus M. Blech, M. D., Chicago, Illinois
Major, Medical Corps, Commanding 2nd Illinois Field Hospital, N. G. U. S.

ALEA *jacta est!* Things for which those interested in the military forces of the United States have stood forever since the conclusion of the Spanish-American War, and which they have preached to an apathetic public day in and day out, are now the principal subjects of thought throughout our nation.

Had we but lent a willing ear as late as two years ago, a paper like the one I am about to present would not have been necessary. Still, nothing is to be gained from such retrospection, the nation is stripping for action, and, so, the moment is opportune for taking stock before we enter on a man's job.

Just as we have been deluded by a catch-phrase about "millions jumping to arms overnight," just so are we now in danger of underestimating, or, rather, overestimating, our resources from the standpoint of war-surgery.

Let me repeat most emphatically what I have said on more than one occasion before this: the acceptance of a commission and the purchase of military uniform and camp equipment does not suffice to effect our metamorphosis into military surgeons.

It is well to bear this in mind, because on the recognition of this dictum as a fact depends our ability so to prepare ourselves adequately for future tasks in war that we shall not be found wanting in the time of need.

Again and again have I heard decried the comrades in the army as mere military officers who have gone out of the temple of Aesculap to worship at the shrine of Mars. Nay, this very cry has come from some of our surgeons in the national guard, who should have known better, when resenting criticisms by such of their colleagues whom the government had sent to pilot them through the cliffs of military organization and administration. And I want to say to you in all earnestness, that all who so believe are wrong. With few natural exceptions, the average army medical officer of today represents as high a type of medical man as any I have had the pleasure of meeting in civil life, and, in addition to being expert pathologists and clinicians, they have not become mere idolators of a paper god, but broad enough as to their professional horizon to view all of our surgical problems from the standpoint of the present war which imposes the greatest conceivable traumatic and epidemiologic tasks.

Theirs must be our standard to gauge our work by. It will not do to accept the view of one well-known New York surgeon who exclaims that we civilians shall go to war to work as surgeons, and that we have nothing to do and should have nothing to do with paper work, military etiquette, and the like. Such a statement, though ostensibly raising to importance mere externals and trifles, has as its base a philosophic view which, if applied in practice, is bound to result in havoc.

Mind, I am not discussing privileges and social status, I ignore rank and emoluments from consideration, for, I am concerned only with the purely scientific aspect of war-surgery. The motive behind my New York colleague's philosophic view is, to be rid of all military responsibility and to bestow upon the suffering combatants the benefits of our combined surgical skill.

And there is the rub!

We have come to look upon ourselves as healers of the sick and to estimate our worth by our ability to interfere with human histology and insure functional recoveries. This may be correct philosophy for conditions as they arise in civil life, but, under the pressure of traumatic epidemics, factors develop that must be fully appreciated ere we can properly estimate the value of our services.

Let us not forget, first of all, that, as individuals, our identity is lost. We no longer are workers at the scientific bench, but parts of a huge machine. Perhaps a simile may be found in an orchestra, where the members cease to be soloists, but each plays only one instrument under the immediate control of the most autocratic and arbitrary leader.

Such, indeed, is the commanding strategist of modern armies. And what does he aim at? Victory! Just fancy what it would mean to us, as a nation, to lose in battle—and then you must realize that the man responsible for assuring victories is granted

almost inconceivable powers. He holds in the hollow of his hand the lives and bodies of millions of human beings and at his mere word thousands must go to death and mutilation, without protest. For, that leader knows only one philosophy—Victory. And he expects those playing the more important instruments in his martial orchestra to attune their efforts to achieve this result, and this result only.

But, music is music, say some, just as they have said here and elsewhere that surgery is surgery, no matter whether performed in a modern million-dollar palace, dedicated to the sick and injured, or under a dust-laden tent in the field. Doubtless, they are right, especially by permitting the qualification that war-surgery simply is modified surgery to meet unaccustomed conditions; but, this at once allows a latitude of interpretation that is voluminous enough to fill a very library.

What Does War-Surgery Mean?

It must never be forgotten that the term "war-surgery" is altogether too comprehensive, too large, to permit of classification as a unit or as a branch of modern surgery. There is a vast difference between surgery at the front and surgery at the base. Indeed, surgery at the front, or, if that sounds better, field-surgery, represents problems that never are encountered at the base hospital. This became clear to many a young and enthusiastic reserve medical officer during the bloodless campaign on the Mexican border—and when I say "bloodless" I ought to qualify that by stating that so far as the sanitary service is concerned the mobilization of 1916 afforded opportunity for study and practice under actual war conditions, except that the epidemic of trauma was only insignificant numerically. The men who worked at the base hospitals returned with the conviction that they had merely changed location, so far as the character of their professional work was concerned. But, things were different with those assigned to field service. They came home satisfied, having had an opportunity to grasp the fundamentals of modern surgical service at the front.

It will be well, then, to review the professional functions of military surgeons at the front.

First in line are the regimental medical officers, those heroic noncombatants who, without even the satisfaction of hitting back, not only have to share all the trials and tribulations of attack and defense in the open and in trenches, but are as exposed to the enemy's missiles as are their comrades under arms. And, how insignificant is their professional work on the firing-line—arrest of hemorrhage, dressing of wounds, relief of shock and pain, this is the sum total of their activities. Truly work that any junior medical student or hospital-corps soldier could do to satisfaction. Indeed, there has been no dearth of voices who have demanded the removal of doctors from the firing-line, as unnecessary sacrifice of valuable human lives. This, however, never can be realized. The regimental surgeon is there to do his share to help win battles, and he does more than his share, not because he can handle a bleeding artery by better methods than could an enlisted sanitary soldier, but, by his presence, he imparts a feeling of safety to the men on the firing-line. Were the men to know that in the event of a casualty only partly trained medical personnel were available, instead of the aid in which they have confidence, the fighting-morale and fire-discipline would deteriorate.

But, after all, the regimental surgeon, even if we ignore his value as a medical officer in camp and on the march, has other functions, directly related to his profession, that none but a highly trained man can fulfil. Let me illustrate this by an actual occurrence. While I served on the Mexican border, a well-known young surgeon assigned to a regiment came to me to relieve his heavily burdened mind. Something had gone wrong in camp and he had received a sharp criticism from a regular army medical officer. He was disheartened at the uselessness of it all. He had joined in the hope of rendering service of a character that did not materialize. He was willing to look after sanitation and even perform routine work; but, he, a surgeon, to be forced to listen to a lot of "theoretic stuff" about nonprofessional matters that was not to his liking, was too much. He was going to tender his resignation. I asked him this question: "Suppose, doctor, we had real war now and you had to accompany your battalion ordered to proceed, say, twenty miles from here, as an escort to a supply-train. You are warned that the mission is a perilous one, strong enemy detachments having been reported about ten miles from here. Just as you had marched with your battalion commander eight miles, a scout reports the advance of a strong cavalry force. Your major decides that retreat

would mean capture or annihilation and, accordingly, deploys his companies in the best possible tactical position, and he requests you to make whatever sanitary disposition of your hospital corps men and material you deem best under his tactical arrangement to avoid unnecessary losses among your men, including yourself, and to insure the best-possible aid to his wounded, of whom he anticipates there will be at least fifty or sixty. He asks for your decision at once, so that he can familiarize his subordinate commanders. What would you do?" I handed the doctor a map of the locality concerned.

My young friend became confused, confessed his utter helplessness, and excitedly asked me where he could acquire that needed information. And I told him that that information was not something like a mathematical formula. One would have to know a good deal of infantry and cavalry tactics, of map reading, and special sanitary tactics before one could satisfactorily solve even so elemental a problem. And I further told him that all this presupposes months of earnest study and practice.

With this incident, I dismiss the subject of the regimental sanitary service, the space at my disposal being too limited to allow me even merely to enumerate the many problems confronting senior and junior regimental surgeons on the battlefield.

The Ambulance Work

The connecting link between the firing-line and the field hospitals is the ambulance company. But, the ambulance company not only executes the transport of the wounded who can not walk, but relieves the overworked regimental personnel. A station for the slightly wounded has to be established, a dressing-station for the seriously wounded must be pitched in a position not endangered by infantry and artillery fire, yet, be accessible without interfering with the ammunition-trains; and all this work is done principally with the view to reducing to the greatest possible minimum the depletion of the firing-line. The officers of an ambulance company who return to the front the greatest possible number of wounded play their instruments in the orchestra well. The instinct of the civilian to aid and to pity him who already has bled must be suppressed in the interest of the firing-line.

Professionally, the ambulance-surgeons have an opportunity to amplify the work of their colleagues on the firing-line, but, operative therapy is reduced to meet absolutely vital indications; and even then it is of a primitive character. As their work approximates that of the field-hospital personnel, I shall take up this station in the chain of sanitary service on the battlefield.

Except where armies become deadlocked and entrenched for prolonged periods, such as we have seen on the Franco-Belgian fighting-front, the designation field hospital is a misnomer. An institution which is so mobile that it must be in a position to pack up its complete outfit—tents, kitchens, operating-room, laboratory, dispensary, office, and six huge wards, each capable of sheltering from 36 to 50 patients—and march away in the space of one hour can not possibly be called a hospital. And just because of that, how much thought has there been bestowed upon these organizations with reference to equipment and organization by our ablest medico-military minds.

The range of surgery that can be, and has been, done at field hospitals is restricted only by the art of surgery itself. Trephining and resection of the skull, ligature of arteries, tracheotomy and esophagostomy, thoracotomy and laparotomy, articular resections and amputations, in short, all possible preservative and destructive operations have been done, thus opening a vista of tremendous surgical satisfaction to the aspiring young surgeon affected with the proverbial "furor operativus." But, just as the newly appointed field-hospital surgeon receives his first lesson in military surgery, his operative ardor receives a damper as his senior teaches him the philosophy of battle victory as the sole guide to operative indications and contraindications.

We had something of a lesson in this during the mobilization of last year. In the first flush of a two-day medicomilitary maneuver, preparatory to a proposed march of 216 miles, what wisdom was there not heard from the lips, especially of one subaltern who had seen service in a British hospital in Flanders. We older officers who understand the workings of the organization placed in our charge tried to teach, to admonish, but, the proverbial stubbornness of the free American citizen reigned supreme, until on the march mentioned warlike conditions appeared, and then something of the great system that makes every personal and professional consideration subservient to the great principle of working with, and as part

of, the machine, not against it, began to filter through their minds. We heard then, what my New York friend has so pompously asserted, that men whose education has cost thousands of dollars should not be made to do the work of twenty-dollar clerks, and that administration and management was something extraneous to a medical man's career in the field.

The Bloody Work Visualized

Applying the conditions of work in a base hospital to those of a field hospital as a working-hypothesis, all their deductions, like a vicious circle, naturally led to a conclusion that could not be swerved into the proper path. If this is the outcome of a year's training in the national guard, if so little conception of field work is displayed by a man who has had the schooling in a base hospital, how much less can be expected of men from civil life suddenly stuck into khaki.

Imagine, however, a tented hospital being pitched in the field in a hurry, and at about the same time two hundred men, shot by infantry missiles, shrapnell, and shell splinters, being brought in, some in shock, the majority clamoring for food, rest or relief of pain, some muttering in delirium of sepsis, others raving from cerebral pressure, one piercing the camp with his cries demanding to be killed, some with jaws missing, eyes shot out, abdominal walls torn away, bladders exposed, some with mutilated limbs, others lying helplessly paralyzed from injury to the spinal cord, and you have a picture of the receiving department of a field hospital.

Suppose now that you have no idea how the battle is going on at the front, whether a few hours later word may not come to march to the rear. Well and good if everything goes well, for, then, even if you must follow the advancing hosts, you can at least transfer the patients to a hospital held in reserve for your relief. But, what if the tide turns against your people in front?

The novice would lose his head—but, one must not. You have six medical officers and 73 men. Not all of the men can be made to work with the patients. Upon whom will you operate first? Will you spend an hour laparotomizing a soldier who shows a perforated knuckle of small intestine in his abdominal wound, and meanwhile let others wait? What result would you have? Will you avert a septic peritonitis? Will you cure the paralyzed patient by laminectomy? Will you attend these men and meanwhile risk a secondary hemorrhage in the large and suffused wounds of others, or will you rush first to the cranial cases to relieve pressure and prevent a septic meningitis?

Remember, you must first see the patients, examine their wounds, all two hundred of them, and then act. Is it not sensible to assume that organization and system play here important roles, that uncertain therapeutic results will dictate conservative or, if you please, palliative measures. With no time for calm reflection, all the moot questions of modern war-surgery must be mastered so that disposition of the patients can be made almost automatically. Certainly, our peace training, no matter how large a clinical experience we may have emjoyed, will serve us little under such trying conditions.

And, again, let me emphasize that the aid even of a field hospital is, primarily, to assist in achieving victories and only secondarily humanitarian. The soldier with a comparatively slight injury who under proper care can be returned to the front in a few days is a valuable military asset; it is not the unfortunate who will have to undergo prolonged care at the base hospital, the convalescent-camp or the general hospital.

Transportation Problems

This leads up to the vast problem of evacuation and transportation to the rear.

It is but natural to ask, at first blush, why the government has made no provision to relieve medical officers of field hospitals from the cares of keeping records, securing supplies, and administering the affairs of the organization, as is done with base hospitals. The answer is a little complicated, yet, simple, nevertheless.

Base hospitals, as such, are institutions for the strictly scientific care of cases of later stages of trauma, gathered together at the outbreak of the war; but, field hospitals have been, or should have been, in existence in time of peace, and all problems of primary equipment and organization must be solved then and not in the field. The principal reports and requisitions, work which consumes much time in garrison and camp, usually are dispensed with under stress of battle. The only reports that are essential are the clinical histories, which safeguard the interests of the patient and the government and form the basis of future pension claims, if any.

This work can not be entrusted to line- or staff-officers without adequate medical training. The senior surgeon, as commanding

officer, is the responsible officer, and, to share this responsibility by decentralization will serve no good purpose, as has been demonstrated in Manchuria and the Balkan campaigns. The field hospital in the battlefield is thrown on its own resources, and only a trained medical officer can handle all problems in a satisfactory manner. Finally, line-officers or officers of certain staff-corps can not be had, because of the dearth of such officers for the other troops.

A word with regard to base hospitals, and I am done. Here, the humanitarian mission predominates. It is up to the eminent specialists to have kept in touch with the latest advances in military medicine and surgery. Here, one will encounter problems to overcome streams of pus, to mobilize anchylosed joints, to close fecal fistulas, to deal with traumatic aneurysms, to unite severed nerves, to localize and extract foreign bodies, to restore tremendous losses of tissue by means of extensive plastic surgery, and, finally, to provide prostheses. At the home hospitals and convalescent-camps, vocational training scarcely will fall to the care of our profession, although these problems should be appreciated even by us.

Our government is not rushing headlong into the European vortex without adequate preparation. It is not too late to prepare. Those of the younger confrères who most likely will serve at the front have much to learn.

I have tried to point out how we help to win battles. Let each answer the question how well prepared he is to do his share. We shall have camps, but, there little will be done in taking up the strictly professional problems of field surgery. That can be done now by informal meetings and discussions. We dare not lose in this nor in any future war. Let us bring some sacrifices and time and money to help our nation efficiently win at all times of stress, as becomes true American physicians.

The Treatment of Senile Constipation

By I. L. Nascher, M. D., New York City

Chief of Clinic, Department of Internal Medicine, Mount Sinai Hospital Dispensary, New York; Editor Department of Geriatrics, "Interstate Medical Journal" and "Medical Review of Reviews."

THE most frequent ailment of the aged is chronic constipation. So prevalent is this condition that it is rare to find an aged person who does not frequently resort to cathartics or enemas, while many of the diseases of the aged can be traced, wholly or in part, to constipation. In a paper on constipation in the aged, read before the Geriatric Society, in February, 1916 (published in *The Medical Council* for May, 1916), I gave the principal causes of constipation and offered some suggestions as to treatment. In this paper, I wish to present a variation of that course of treatment, one that has served me well in several hundred cases since the former paper was written.

The Main Causes

The principal causes of senile constipation are: diminished peristalsis, owing to atrophy and atony of the muscular fibers of the intestines; diminished gastric, hepatic, pancreatic, and intestinal secretions, owing to atrophy of the secreting glands; enteroptosis, caused by flaccid diaphragm and omentum; dyschezia, owing to wasted and atonic abdominal muscles, general weakness, hardened feces, and, often, to dilated hemorrhoidal veins; dilated rectum, owing to atony and atrophy of the muscular fibers, the colon forming a pouch in which the feces accumulate and harden; besides, probably, some degenerative changes in the peripheral nerves and the ganglia controlling the mechanism of defecation. It is not always possible to determine what factors are responsible for the constipation, but, some of these factors exist in every instance, while sometimes most or all are present.

Diminished peristalsis and diminished secretions are normal senile conditions and are present in every case of senile constipation. A dilated rectal pouch is found whenever there has been habitual neglect. Enteroptosis is of frequent occurrence in women and sometimes in obese men. Women who have borne many children generally have weak, flaccid abdominal muscles, which they can not bring to their assistance in forcing defecation. Old men frequently have the same trouble and they sometimes will press upon the lower part of the abdomen with their hands, to help in the expulsion of the feces.

The therapeutic axiom, "remove the cause," cannot be applied to the treatment of

senile constipation, inasmuch as the underlying cause, the senile involution, can not be removed. It is possible to stimulate peristalsis, it is not possible, however, to restore the wasted muscular fibers of the intestine; it is possible to stimulate the secretions or to supply secretions or substitutes for secretions, it is not possible, though, to restore the atrophied glands; senile enteroptosis can be relieved, but, it can not be cured nor can the degenerative causes for the dyschezia be eliminated. It is possible to cure the dilated hemorrhoidal veins, correct errors in diet, create a habit to go to the water-closet daily, even to procure a daily stool while under treatment, still, it rarely is possible to restore the functions to the condition that was normal in earlier life, that is to say, a daily stool without artificial aid.

The healthy senile individual has smaller, drier, and less frequent stools than in earlier life, and, if he has such stools at regular intervals, even of two or three days, without the use of cathartics, nothing should be done to increase their frequency or quantity. If, however, the stools occur at infrequent or irregular intervals, if they cause distress or must be forced by cathartics or enemas, then efforts must be made to remedy that condition.

The Routine Treatment

In almost every senile case, there is an accumulated mass of fecal matter in the dilated rectal pouch, and this must be removed before regular treatment is begun. In some cases, a simple soap-water enema will suffice, as a rule, however, the feces are hard and dry and closely adherent to the rectal wall, and can not be dislodged by soap-water. An enema containing half an ounce of sodium carbonate and an ounce of glycerin to the quart of water ordinarily is effective if properly given. A long colonic tube should be used and the reservoir kept rather low, so as to insure a slow stream flowing with but little force; the object being to soften and disintegrate the mass, so that it can be washed out. In several cases in which a digital examination was made after the bowel had been, apparently, cleared by the enema, hardened masses were found adhering to the rectal wall, and in a few instances a rectal scoop was required to dislodge them.

As in every case of senile constipation there is diminished peristalsis and diminished intestinal secretion, the patient should receive a peristaltic stimulant and a stimulant of the intestinal glands. Aloes is the most effective peristaltic stimulant, only, its tendency to produce griping congestion of the hemorrhoidal vessels, besides its intensely bitter taste, makes it objectionable in these cases. Cascara sagrada is less active, less griping, does not affect the hemorrhoidal vessels, while the bitter principle can be removed without impairing its therapeutic action. As a stimulant of the intestinal glands, there probably is no drug equal to rhubarb. In addition to these two drugs, liquid paraffin should be used as an intestinal lubricant, since the intestinal secretion of mucus is greatly diminished. As a routine formula in senile constipation, I prescribe 10 minims of the fluid extract of rhubarb, 10 minims of a bitterless cascara preparation, and a tablespoonful of liquid paraffin three times a day. The combination is effected by emulsifying the oil.

Many cases of senile constipation are aggravated by habitual neglect, the patient deliberately disregarding the call for stool until headache or abdominal distress makes attention to the call imperative. The mixture just mentioned will ensure a daily evacuation, nor will the patient disregard the urge. After a few days or a week, the remedy should be taken twice a day, then, if this proves ineffectual, the dose must be increased. After the patient has acquired the habit of going to the water-closet every day, the size and frequency of the dose should be decreased; however, the patient must be admonished to go to the closet daily, whether there is a desire for stool or not. In many cases, a normal stool every second day would suffice, but, if we permit the patient to delay a day after he has acquired the habit of going to the closet daily, he soon will relapse into his careless habit, and we may be obliged to begin treatment all over again. It is for the purpose of instilling in the patient the habit of going to the closet daily that the treatment is designed to produce a daily stool, even if a daily stool is not necessary, for, the habit once acquired, will overcome the tendency to disregard the call for stool. Here, we must take into account the mentality of the aged, their adherence to habits once formed, their forgetfulness, their disregard of the physiological needs of the organism, and the weaker impression that such needs as the call for stool, for urination, for food, and so on, make upon their minds. The habit of going to the closet every day, preferably at the same hour every morning,

is an essential part of the treatment of this condition.

When enteroptosis is present or the abdominal walls are atonic, an abdominal bandage should be worn. If there is an enteroptosis, together with flaccid abdominal walls, the lower parts of the intestine lie suspended in a pouch that overhangs the pubis and groins. In such a case, the bandage should be made so that it will hold up and push back the overhanging part of the abdominal walls. Massage is of service in some cases of atony of the abdominal muscles in obese subjects, but, it is useless when the abdominal walls are thin, and worse than useless when there is a separation of the rectus muscles—a condition sometimes found in women who have borne many children. Dyschezia due to general weakness can be considerably relieved by using a low seat or placing the feet upon a footstool during defecation. Hemorrhoids, fissures and other surgical conditions causing painful or difficult defecation need not be considered here, as they are within the province of the surgeon.

Dietetic Measures

Diet is not an important factor in the causation of senile constipation, but, some articles in the dietary aggravate this condition. Tea, if made properly, does no harm, but, as the sense of taste becomes blunted, aged tea-drinkers make their favorite beverage "strong" by allowing the infusion to stand so long that the theotannic acid is dissolved out of the leaves. Their tea then simply is a solution of tannin, which is constipating. There are few other articles of food that are taken long enough to cause chronic constipation, although there are many that will be taken occasionally and will then produce temporary constipation or aggravate an existing constipation. Underdone, smoked and chemically preserved meats, fresh bread made from bolted flour, dry crackers, bread and cake in which an alum baking-powder was used, cocoa, all tend to constipate. After the teeth fall out, any food that can not be crushed between the gums or between the tongue and the soft palate or which cannot be brought into a liquid or mushy state and must be swallowed in lumps, will cause or aggravate constipation.

The highly lauded foods containing bran or cellulose are not as effective as peristaltic stimulants in the aged as they are in earlier life and, if the senile degeneration of the intestines is far advanced, they will constipate unless reinforced by the more powerful peristalsis stimulating drugs. In senile degeneration, there not alone is paresis of the bowel, there also is atrophy of the muscular fibers, and the remaining fibers soon will become exhausted when called upon to propel a large bolus. Such foods should be used by the aged, but, it is folly to depend upon them to furnish the peristaltic stimulus to overcome the constipation due to the senile degenerations. The socalled bran foods, agar, and similar substances, which act by furnishing an inert bolus for peristaltic stimulation, are useless in this condition. The bolus should be supplied from indigestible food remnants, cellulose, and the like, and, if these do not incite sufficient peristalsis to propel the mass, the drug stimulants should be employed.

The Problem of Senility

By A. L. Benedict, A. M., M. D., Buffalo, New York
Editor, "Buffalo Medical Journal"

[*Concluded from August issue, page 573.*]

The Organism's Initial Endowment with Vital Energy

SO, THE more closely one analyzes the essence of senility and the cause of death in the aged, the more strongly is one tempted to get back to the former frank acceptance of the idea that there occurs a gradual exhaustion of a vital force of which each species and each individual, within certain limits, possesses a fairly definite initial supply. Still, even such an acceptance does not necessarily imply the crude conceptions of earlier ages. In many instances, we can easily recognize the existence of lesions that have directly caused death, analogously to the occurrence of an unrepaired defect in a piece of machinery; and in all instances we can extend the analogy and recognize that without any incapacity the whole organism has gradually failed to be maintained in a state of perfect repair, so that its continuing to function has become physically impossible.

However, even here, we must admit that the failure of the reparative functions in

general is owing to the failure of a force, and often, also, that despite the fact that various organs are not in perfect condition they would be capable of continuing to function, provided they were governed by the same vital force as at earlier ages. That is to say, we have abundant experience that at earlier ages the same or even far greater histologic changes are compatible with life. It is only begging the question to argue that the energy upon which life depends is developed daily by well-understood physical processes, mainly oxidation, and that repair of waste and even compensation for pathologic destruction is similarly though not so thoroughly explained. We can scarcely get away from the admission of an initial force behind these developments of energy.

A further reason for the acceptance of some modification, at least, of the original conception of a vital force, is connected with a consideration of interest quite apart from this conception. As is well known, different animals, even of the same species, become senile and die at very different ages. As all derive their daily energy and perform reparative functions on a physical basis of energy that differs in but very minor ways, it is scarcely possible to explain specific differences of longevity, any more than individual human differences, except by postulating some vital force that is inherent.

Three Score and Ten the Natural Limit of Human Life

The assertion has been made by some that the maximal longevity of human beings—with due allowance for very rare exceptions—is between four and five times the period required to reach physical and mental maturity, and that the ratio is about ten for the lower animals. Many have argued, therefore, that the empirically observed span of human life is being artificially shortened; in other words, that under proper conditions, barring actual disease and accident, man should live somewhere near 200 years. With due respect for certain prejudices, it may be said that there is no authentic record of a single human life of this length, of only a very few of about 150 years, while the observation of all peoples and all times agrees closely with the present day confirmation of the Psalmist's estimate of 70 or 80 years as the normal full span of life, although not a few attain to the age of 90 and even to 110. With certain obvious qualifications, it may be definitely asserted that human longevity is not artificially shortened by civilization, but rather the reverse.

The assumption that the ratio of total longevity to the period of maturation should be the same for all animals, including the human being, by no means is warranted. For example, what may be fairly accepted as puberty in dogs is reached in about as many weeks as the requirement for human beings in years. The dog reaches adult age—that is ceases to grow—at rather less than the rate of a month per year as compared with man. His total longevity is just about one-sixth that of man. In other words, the dog's life for these three successively included periods is, respectively, about 50, 16, and 6 times as rapid as man's.

It would be interesting to have reliable statistics by veterinarians as to the periods of the development and longevity of various lower animals. So far as the writer has been able to learn, there is very little authentic information obtainable and much of that contained in works of reference is based on very unreliable data. Carp are said to live two or three centuries, but just how the individuals have been identified is a question. Tortoises also are commonly stated to be very longlived, and identification in such instances is easily made by carving the shell. For example, a gentleman informed the writer that somewhere in Ohio there was a turtle with some 18th century date on its shell, but he added the information that he himself carved it in about 1875. Domestic and exhibition animals frequently are available for exact notes of longevity, but no accurate scientific study has been made along these lines, though the statements in compends of useful (?) information are probably fairly reliable. It may be confidently asserted, however, that each species has a fairly definite average of maturation as limited by puberty, full reproductive power, cessation of growth, and total longevity, but that the rates do not correspond with definite ratios with regard to the latter, and that man's longevity must be determined by direct empiric observation, without reference to the lower animals.

Some years ago, the writer attempted to ascertain whether it would be possible to establish standards of histologic conditions corresponding to various ages for man, and whether the conditions for man at the ordinary maximum age were the same as for the lower animals at corresponding ages. Physicians are required to state, in a variety of certificates, the apparent as well as the

actual age of an individual, and most persons agree fairly well in such estimates of apparent age, although allowances must be made for a variety of factors, including even nationality.

However, when it comes to standardizing such superficial estimates to the extent of formulating average physical changes corresponding to any given year of age, even within wide limits, such as a decade, the writer has been unable to attain definite results either by personal study or by reference to the work of others. Even inquiry of various distinguished veterinary authorities has failed to elicit anything definite as to the correspondence between human and animal tissues at corresponding ages. There are, of course, generally known facts, as, that old animals usually are lean, that the meat is tough and that fibrous tissues are in relative excess and that the bones are fully ossified, just as certain facts regarding the thymus and thyroid glands and sexual organs, obliteration of sutures of the skull, ossification of rib cartilages, and so on, are known, for human beings; but, nothing of exact scientific value has been obtainable. It has not been possible, for example, to say what the normal or at least average conditions of the various tissues and organs should be at the age of 70 or 80, or even to learn whether a dog dying at 15 is comparable histologically with a man dying at, say, 90. Yet, both for human beings alone and in comparison with other animals, it would be exceedingly interesting, perhaps ultimately of great practical value, to have at hand such data; and there is no obvious reason why they could not be established.

A Sermon for Young Doctors

By George F. Butler, A. M., M. D., Kramer, Indiana
Medical Director, Mudlavia, Kramer, Indiana

[*Continued from August issue, page 555.*]

The Incompetent and Dishonest Doctors

ONE of the most glaring and reprehensible shortcomings of the medical profession is the fact that among them, as in every other calling or vocation, there is found a certain percentage of incompetents for whose mistakes and ignorance the entire profession is held responsible. These men have been allowed to slip through college by reason of inadequate observation of the individual student by the faculty of some large college or by "cribbing" or with the help of other members of the class, and, possessed of their diplomas, have taken rank with the really efficient students of medical practice. Their unpreparedness and incapacity may be covered up for a time by their brazen bluff and good luck, but sooner or later an egregious blunder that results in tragic consequence is sure to occur, and then the profession as a whole is brought into disrepute by the inexcusable ignorance and action of one of its unworthy members.

The principal fault of such incompetents, aside from their innate ignorance and lack of sound judgment, is their culpable negligence in the matter of thorough examination of the patient. Because of carelessness, indifference or lack of adequate knowledge, their patients are subjected to only a superficial and hasty examination, and thus an incorrect or imperfect diagnosis is reached. This, in conjunction with inadequate therapeutic knowledge, means illogical or improper treatment that leads to unsatisfactory results, and another bit of discredit is thrown upon the doctor.

Deplorable as is this incompetence, it is a still more lamentable fact that there are to be found instances of absolute dishonesty among members of the profession, who merely for the acquirement of a few dollars will actually risk the health or even the lives of their patients. I do not mean those all too numerous cases where the medical man in all sincerity errs in judgment, but such flagrant offenses as subjecting an individual to a serious operation where there is not the slightest shadow of excuse for surgical intervention, and where it can be of no possible advantage. Such men when found out, as surely many of them must be, place the medical profession in a place of supreme contempt among the laity; they deserve no protection, and they should be afforded none by their confrères, but should be exposed and condemned. It is to be hoped, however, that such examples are growing fewer and that the time will come when this criminal class shall be entirely eliminated.

Another strangely developed fault in the profession is, the lack of sympathy with patients and the tendency to look upon them

as merely "cases" or, as in hospitals, "material" for clinics or demonstration. This view, largely fostered and developed in the hospital-graduate or attendant, is likely to be carried too far in private practice. The man or woman who is ill wants to be, and is entitled to be, considered a living, ailing human being looking for aid to recovery, and not merely another case of typhoid fever, pneumonia or what not in the statistical material of the doctor's clientèle.

These men are busily engaged trying to discover the cause and prevention of diseases; which, of course, is a most important and praiseworthy study, an absolute necessity for the advancement of medical science. But, they should devote a little more time to the study of therapeutics, they should strive harder to cure or relieve people who are already sick and demand restoration to health.

It is by no means the least anxiety doctors must bear, to protect individuals from the effects of a generally diffused tendency to trail off after strange and false gods in medicine; that is, to protect people from themselves—from following illusory promises of health. The air is full of these *ignes fatui*, every one of them beckoning from over a dangerous bog and all getting victims—lots of them.

The natural enemies of man are numerous, God knows; but, the worst of them all is, the uneasy mind of man himself, especially of man in a half-developed mental state, slowly awakening to a mistrust of established things and eager to lay hold of plausible innovations.

It has always been so. In the darker days of a hundred years ago, before medical art, as we now know it, had started upon its extraordinary history of discovery and development, the wise woman, the dispenser of herbs and "simples," the dealer in charms and spells divided with the doctor, in unequal proportion, the administration of cure, counteraction, and prevention of disease. Nobody now thinks of these things, not because there has been an abatement of credulity, but, because the things themselves have passed away. However, they have been succeeded by others in no degree less foolish or harmful, only conforming more easily with changed methods of thought and customs. Until quite recently, the tendency found its widest vent in the direction of socalled patent medicines. Stricter scrutiny of the character of advertising-copy and a finer sense of public responsibility among publishers have combined to deprive those weird mixtures of the publicity through which they attracted sales. They are not yet dead, I am sorry to say, but they are dying.

This, after all, is a doubtful benefit, because the human weakness upon which they throve remains and is finding newer and far more insidious outlet in a fresh and extraordinary revival of the very ancient error that mixed medicine with religion. Either that or a confusion of thought in which a few elementary and well-understood truths are mixed with speculation, and a system of practice evolved which cannot fail to do enormous harm.

These socalled forms of "new thought" differ in no essential from the Egyptian practice of four thousand years ago, under which the functions of the physician were exercised solely by the priests, who dosed the body and doped the soul with impartial vigor and with a view single to financial returns. Even now, as then, they assume to doctor a man's liver according to his lights.

Completing the Cycle

And thus we swing through the slow cycle of the ages. The exploded fallacy of one stage becomes the accepted rule of a later one. In all but the surface of things, we remain unchanged, and in no other more sadly the same than in the duty of the elder brothers of the race to care, as best they can, for the vast majority who think ignorantly and with bland confidence press forever toward the things, the beliefs, and practices that work for evil.

It is probable that the advance made in the healing-arts since the 1840's has been greater than the records of all previous time in history could show. And, when I say "the healing-arts," I mean the whole domain of medicine, including the most paradoxical spectacle of modern times— the supreme art of prevention.

This development discloses the most astonishing example of pure unselfishness in the entire range of modern life. The physician commonly is assumed to thrive by the ill-health of others. In a sense, that would seem to be true; but, on full consideration, it is found to be the reverse. The bounden duty of every doctor is, to prevent disease by every means in his power and to stamp it out whenever he encounters it.

Our Highest Function Is to Prevent Disease

As a matter of fact, the doctor is the only professional man in the world who devotes the very best energies he has to combating

the very conditions the existence of which is supposed to furnish him a livelihood. The learning, research, and untiring labor of every medical association in Europe and America is directed to the discovery and eradication of disease-causes and only in a minor degree to the treatment of disease. The health of human beings, wherever the white man lives or wherever he has penetrated, has, in the last thirty years, been so successfully conserved that the insurance-actuaries are beginning to report an increased longevity. The discovery of the origin and transmission of disease by germs has been followed by the most widespread and sweeping reforms in wholesale public sanitation and by counteractive treatment in private practice.

Without these things and without the increase of half a billion in the world's population during the last half century or so, there would have been a succession of murderous scourges and plagues such as imagination reels to think of. Without them, the crowding armies that are marching toward us out of the next quarter century would be entering upon a world of unspeakable calamity and desolation.

Here, in the United States, our census shows that our population of the past forty years has grown at the rate of 15 percent each period of ten. In the last ten of the forty years, as shown by the last census, there was an increase of almost 20 percent. These percentages compound from decade to decade. Stop a moment and think what that means:

We have now about 90 million people. The latest rate of increase being maintained—and there is no apparent reason to the contrary—we shall, in twenty years have, within our continental limits, say, 130,000,000; in thirty years, over more than 155,000,000; in forty, over 185,000,000, and, in fifty, over 260,000,000 people. Up to a very little while ago, we counted, in our country, the number of acres to the man. The time is rapidly approaching when we shall be counting the number of men to the acre. Can not you see that the existence of these thickening millions, bone of one bone, flesh of one flesh, whom we ourselves, by the inexorable action of a basal law in nature, are calling into the world, must hinge upon the state of public health, the mastery that must be established over the forms and practices and policies of public and private life, such as will most effectively uphold vigorous individual health?

There is only one way to work out that problem: tireless search for the causes of disease, for the seat of unhealthful influences, and more tireless effort to compel government in all its forms to adopt and enforce such laws as will render these discoveries effectual unto human life—for the benefit of the people at large.

This is the work the doctors must do. It has a significance so immeasurably higher than any private or personal interest that it has shaped and is holding the whole bent of mind among the doctors, not as a professional body merely, but as men and daily workers, each in his field. It is so implanted as a part of the education of every reputable physician that his first impulse upon his suspecting the cause of any disease is, to drop all else and hunt it down and then to complete its eradication. Not one of them but holds his discoveries, his time, and his skill at the unrestricted service of all his brethren, for the advancement of the one cause to which they are all committed, and not one of them—I say this emphatically—is in this dominant labor of his life actuated by personal motive or the hope of personal gain.

This is so much a truth that I feel it is almost unethical to say as much. I do not say it by the way of boast nor as a plea for my professional brethren; for, we need no plea and ask no recognition for a plain duty, plainly performed for duty's sake. We are in the forefront of an advancing civilization such as never before was dreamed of. It comes under influences so benign that the old bloodlettings and decoctions and pestilences that kept down population are no more, and the earth will soon be filled. A higher power is keeping us pushed to our task of making life safe and keeping a health-efficiency in advance corresponding with our growth in numbers. It is a manifestation of that same power whose finger moves mankind from epoch into epoch and "hangeth the worlds upon nothing."

Sometimes, in the pauses of work, I wonder at these things. I see the labor demanded of, and performed by us, the broad beneficence that flows through it to all the races of men that dwell upon the face of the earth, but also the broad indifference with which this service is received, except in cases where it is travestied and bayed at. Is there any wonder that at such times we often ask ourselves, "Why are doctors?" Put it to yourselves. What would you think? Eagerly sought when life is threatened, promptly forgot when the danger is past, poorly paid, at best, and often not paid at all (for, somehow or other, people are in the way of think-

ing that a doctor's bill always can wait), and living a life that cannot be called our own, since our time is at the beck and call of everybody and everything (from a pain in the stomach to a case of paralysis), can one help wondering, and asking the question: Why are doctors?

There is just one answer to that. We are, because in the operations of a providence that is the highest force in the chemistry of life we are necessary to our fellow men, to the generations now moving here. It is our unavoidable destiny to carry on the work of bodily salvation and, as we leave the scene, to pass on to succeeding and able hands the torch of knowledge in full, pure flame, unblighted and undimmed.

This is neither the time nor place for a review of what has been accomplished, still, I can point with pride to our pure food and drug laws—formulated and backed by physicians and pharmacists—can point with pride to them, while viewing with regretful alarm the impossibility of pure-thought laws. We can protect people from poisonous foods and poisonous drugs; we can not, however, prevent them from thinking on the bias, nor even can we protect them from many of the results of that deplorable process.

[*To be continued.*]

The Sympathetic Nerve and Orificial Treatment

By R. D. Pope, M. D., DuQuoin, Illinois

THE deeper we search into the intricacies of the human body, the more profoundly are we impressed with its wonders, its seeming complexity though actual simplicity, its perfect adaptability, its completeness, and its almost unlimited possibilities. The more thoroughly we understand its workings, realize its powers and contemplate its wonders, the surer are we of the hand of the great Master Builder.

Of all the wonderful structures of the human anatomy, the sympathetic nerve to me is the most marvelous, most complete, and most important. As one writer says, "It is the first part of our anatomy born and the last to die." It is on duty constantly twenty-four hours a day and sixty minutes every hour, from the day of our birth until our final departure. It can always be depended upon to do the right thing at the right time if left untrammeled and unimpeded in its course.

The Anatomical Aspects

A brief review of the anatomy of the sympathetic nervous system will be necessary in order clearly to understand its relation to important organs.

The system is composed of a chain of bead-like bodies of gray matter arranged longitudinally in two nervous branches, which extend in front of the spinal column from the base of the skull to the coccyx.

These ganglia are arranged in pairs and in part correspond to the number of vertebræ.

Each sends and receives filaments to its nearest cerebrospinal nerve as it emerges from the spinal canal, so that, as in our telephone system, one can talk and the other listen. The ends of these chains are united near the coccyx in what is known as the ganglion impar, which in turn sends many, many rootlets or filaments into and around the rectum and sexual organs.

Some very important ganglia are found just beneath the skull. The largest, and one of the most essential, collections of ganglia is located just posterior to the stomach. Its relation to the heart, respiratory organs, and sexual organs is so very vital that it is often called by anatomists the abdominal brain or also the solar plexus. It is said by some to be more appreciated by pugilists than by doctors. The more is the pity.

Another striking anatomical fact in connection with the sympathetic nerve is, that almost our whole bodily shape is made up of tubes, which range in size from the alimentary canal down to the smallest oil-ducts. The blood-vessels are tubes, the lacteals, the sebaceous and the sweat-glands, the kidneys are made up of tubes, as are also the testicles and ovaries. In fact, the tubular system fills our bodies so completely that it is said that they alone would make a perfect human form if all other structures were disregarded.

All these tubes have a middle, or muscular, coat, composed of the nonstriated or involuntary muscular fibers, and, with one exception, all are innervated solely by the sympathetic nerve. The longitudinal fibers shorten and the circular fibers of these muscles narrow the

caliber of the tubes, so that by consecutive action the solids, liquids, and gases of the entire body are transported. In other words, the entire body-commerce is carried on by means of tubes, and the governing power that innervates and regulates the whole, is the sympathetic nerve.

The blood-vessels are such an important part of our anatomy that they have been provided with fibers from the cerebrospinal nervous as well as the sympathetic system. Therefore, the circulation of the blood can in part be controlled by our will or by emotions produced by outside influences. Thoughts may flush or pale the face, start the secretion of salivary or peptic glands or engorge the sexual organs.

This unison of the two nervous systems is called the vasomotor system of nerves that control the capillary circulation and, consequently, nutrition. When, however, the cerebrospinal system is under an anesthetic, in sleep or in abstract states, it leaves to the sympathetic nerves the duty of furnishing the proper supply of nerve-force to the vasomotor system. The cerebrospinal nerve is easily tired and demands rest, but the sympathetic nerve alone is tireless in its action and is the mainstay of the circulation.

The Cause of Chronic Disease

Now, since the circulation is the supply-train, carrying every particle of nutrition and also, the funeral-train, transporting all the débris, the capillary circulation could be considered the basis of all bodily activity. It has been further proven that blood stasis is the beginning of all pathology, so far as physical manifestation is concerned.

We know that drugs and other remedial measures act only as they influence the circulation, and, as the sympathetic nerve is the mainstay of the circulation, the sole stimulus of peristaltic action as also of all involuntary muscular action and of the organs of reproduction, it is quite evident that health demands a vigorous, free, and untrammeled sympathetic nerve.

It is plainly to be seen, therefore, that the real underlying cause of all chronic diseases is, impaired sympathetic and consequent nerve waste. Nerve waste being the predisposing cause of the continued troubles of the chronic invalid, all of us, as physicians, desire to know where to locate it, how to recognize it, and what may be the remedy.

A few facts so thoroughly fixed as to constitute laws have been carefully worked out by the great students of the sympathetic nerve. A careful consideration of them can help us. (We quote in part from literature.)

1. The irritation of any organ begins at its mouth, this being true not only of individual organs, but likewise of the body as a whole.

2. The lower mouths, or orifices, of the body are all provided with sphincters supplied by the sympathetic nerve. They have also sphincters under the control of the cerebrospinal system, but nature relies mainly upon the involuntary sphincters.

3. Clonic spasms of involuntary muscular fibers are a common cause of sympathetic-nerve waste.

4. The sympathetic-muscular fibers contract with abnormal tension and duration upon morbid portions of the mucous membrane as surely as upon foreign substances.

5. Irregularity and consequent congestion and succeeding irregularity of sphincter-guarded openings involve undue muscular tension, and, therefore, nerve waste.

6. This nerve waste is occasioned, not only by the fact that nerve-force is exhausted by the contracted and stimulated muscular fibers, but also by the fact that the mucous membrane and the nerve-fibers which terminate in it also are in a morbid state, and consequently the undue pinching of these diseased nerve-terminals is a prolific source of nerve waste.

7. Thorough dilatation of the lower openings of the body affects more or less profoundly the respiration and consequently the capillary circulation of the entire body.

8. Where there is reflex of irritation, there is also a reflex of congestion.

9. Severe forms of local trouble at the lower openings are, therefore, usually felt as local troubles, but where the metastasis of irritation has taken place and the congestion has been reflected elsewhere.

10. Hypertrophy passes on into atrophy, and, although no local subjective symptoms are discernible, the objective condition will demonstrate atrophic changes.

The Remedy

11. The removal of the atrophied condition observed at the lower openings of the body in such cases and the relief of the undue muscular tension involved puts an immediate stop to the prodigal waste and expenditure of sympathetic-nerve-force involved in the abnormal pinching of atrophied tissues, relieves the inadequacy of peristaltic action generally, flushes the capillaries universally, establishes an improved digestion and consequently an

improved nutrition of every part of the body.

12. Adequate orificial work, therefore, must smooth openings which are rough and cause to relax sphincters which are unduly contracted.

This often requires surgery first, which is to be persistently followed up by either electricity, vibration or other mechanical means, until the lower openings of the body are freely dilatable to a normal degree and entirely relieved of all forms of irritation.

Many of our chronics among the women date the beginning of their troubles either from the appearance of their menstruation or from a confinement.

The girl that is allowed to reach the state of puberty with a hooded clitoris has for years had a continuous irritation of the sympathetic nerve and consequently a continuous nerve waste. This impaired nerve-force was bound to result in a faulty development, especially of the generative organs, and, usually, an impaired peristalsis with poor digestion. Time and age force this menstrual function upon organs that are unprepared, and disastrous results follow. The girl who at this age should rejoice in a beautiful form and a glow of health finds herself only a nervous, anemic, partially developed misfit.

A chronic female patient is born. Or, perchance, having been born right, she develops well, has seemingly perfect health until she reaches the state of motherhood. But since then she has never been really well. Why? Many of the authorities tell us that eighty percent of the primiparas suffer more or less serious lacerations in confinement and but a very small percentage of them are repaired. Frequently the cervix, often the vaginal floor or walls, many times the perineum, and at times all of them are torn. This not only leaves a weakened pelvic floor, with its resulting prolapse, but, worse still, cicatricial, or scar-tissue forms in these lacerations and, as time advances, becomes hardened and atrophied, inclosing, as it does, many fibers of the sympathetic nerve. Thus we have a continuous irritation and a most prodigal nerve waste.

No, the patient feels no pain at the source of the irritation, or very seldom; for, these parts are poorly supplied with cerebrospinal nerves, and the richly supplied sympathetic nerves do not cry out with pain, as they are not nerves of sensation but only of function. These patients complain of cold feet and hands, indigestion and constipation, with their resulting pains and evils. The respiratory centers may feel the loss of the proper innervation the most, and a chronic asthma or other impairment of function develops. A goiter may appear. The brain may be the victim of the weakened innervation and circulation, and the patient may end with an impaired mentality, she may even become insane.

But these cases are not all hopeless, even after years of suffering. The girl who is undeveloped may, with a very little surgery, have this nerve waste remedied, the circulation restored, and the undeveloped organs and muscles brought up to normal. The mother may have that hardened scar-tissue removed, the lacerations repaired, and the weakened pelvic floor rebuilt. Then, if all the sources of nerve waste are removed, she will be restored to the bloom of health.

But right here is where so many surgeons so often fail. They remove the most conspicuous pathology, but fail to see the tightly hooded clitoris, the narrow meatus or the scar-tissue in the cervix or rectum. Some remove an appendix and never even look for the cause of the appendicitis, which can nearly always be found in the rectum. Some remove a malignancy of the breast, but never look for the accompanying laceration of the cervix.

Now let us repeat. To get satisfactory results, all the sources of nerve waste must be removed. Then this mother can be restored to health, even though she has reached the state of the mentally defective; for, even the doors of the insane-asylum have had to open to the orificial surgeon. Yes, even the great white plague will fall before the surgeon who knows the power of the sympathetic nerve. And why not? Can any disease stand long before a perfect circulation?

Another great field for the student of the sympathetic nerve is the now popular field of prophylaxis. Every child born into the world should be carefully examined by a competent physician, one trained to know an abnormality when he sees it, and the abnormality be promptly removed. Then, and only then, can we expect a normal development, physically, mentally, and even morally. Then, when injuries occur or acute diseases leave an impairment affecting the sympathetic nerve, it will be possible by prompt recognition and repair to restore the patient to health.

Those of us who earnestly desire to benefit the chronic invalid will study the problem of waste and repair in relation to the sympathetic nerve.

On the Nature of Memory

By Lewis W. Spradling, M. D., Athens, Tennessee

DO YOU suppose that it is possible that any human being has not at some time in life felt that thrill of intermingled joy and sadness that pervades the soul upon an unexpected visit, after years of absence, to the home and scenes of childhood and youth? Each object, each face, every word spoken by old acquaintances, the fields, the brooks, the hills, the atmosphere, everything brings forth a reproduction of scenes and events long, long ago stored away in the archives of memory?

The foregoing is the introductory passage of a letter from an old friend written to me while he was on a visit at his old-time home. There is nothing out of the ordinary in his expression, but, being so well acquainted with him and knowing his extraordinary capabilities as a sentimentalist, it produced within me an inclination to study more seriously the elements of the mind that constitute memory.

We are forced to conclude that the term "memory" designates but the power of the mind to retain impressions of things and the ability to recall them at will; that it is a storehouse of images and impressions, and that, if but the minutest part of it had a material basis, some memories would be immense receptacles. Intangible, invisible as the memory is, it is the most indispensable faculty of human intelligence. Without reliable memories, what would be the social and political status of human society? The question staggers us. In just proportion to man's social and political usefulness, is his recollective endowments. How wonderful is the intricate mechanism of man's intellect which permits him to recall, review, live over his past life at his own pleasure! Reasoning thus, why should one ever really be lonely?

It is by comparison through memory that perceptive and creative genius has advanced in all ages, and it is through forgetfulness of proven precepts that mankind retrogrades. From this, we conclude that in all the student's curriculum no branch is more important than that of memory culture and memory training. There are different grades, different classes, and different strengths of memory, as there are of intellects; but, memory and intelligence, being distinctive faculties, are rarely coequal endowments, since many strong memories are intellectually weak, and the reverse. Of the capabilities of developmental training, however, memory at once is the more amenable. It is possible to overdevelop in intellectual training, but such has never been said of memory. Indeed, it has been demonstrated that mental overwork is injurious to memory.

There are various methods of memory training, and, like all other enviable accomplishments, the charlatan has thrown it into the commercial category of educational institutions. Some of the more pronounced fakers have gone to the limit of "guaranteeing to produce in an ordinary intellect the ability to memorize completely a book with one reading, by their wonderful (!) 'artificial memory system'." Such claims are unworthy the space they occupy, and it is surprising that some of the better-class magazines will carry advertisements so obviously fakish.

It is interesting to note the automatic performance of the mechanism of memory, which is set instantly in motion, independent of any volitional effort of the mind, simply by a slight impression through one of the special senses, as, for instance, an impulse reaching the department of memory through the centers of hearing. Thus, the buzz of a rattlesnake at once brings a mental picture of the reptile and the cage, and a vivid recollection of the whole "zoo." Or, should the impulse reach memory through the sense of sight, a little scrap of oriental plaids, for example, reproduces in a moment the outfit of a midway "hoochy-coochy" dance. Or, should the recollective forces be set in motion by an impulse through the olfactory centers, the odor of gangrene, for example, the victim, the suffering, the incidents in the production of it, all appear upon the mental scene as if by magic.

It is, however, by some extraordinary or accidental incident out of the ordinary that in the past had left its impression, that the slightest impulse through a special sense sets the involuntary recollective apparatus in motion. The commonplace, frequent, and ever occurring incidents, however important they may be, the impression of which reaches the mind through the senses, do not disturb the involuntary recollections to the extent of inducing from memory's storehouse a reproduction of the mental picture of everything in connection with such incident. And it is a wise provision of mental arrangement that such a thing can be; for, of all the burdens of the mind, memory carries the

heaviest, and it is by this provision that it is enabled to select and regulate its load.

In a broad and general sense, memory is as boundless as the universe. Its capacity is limitless. What, then, in all creation can compare with the human memory? Invisible, intangible, incomprehensible! And, yet, memory is. It is no myth. Inexplicable. Yet, a reality. Undemonstrable. Yet, it works with mathematical precision.

It has been demonstrated that other essentials or other functions of the intellectual faculties may be present and active while memory is entirely absent or in a state of suspension, as in cases of "lapse of memory", when the person can comprehend and answer questions intelligently, but can recollect nothing of the past; a complete obliteration of all past impressions, yet, the mental faculties appear to be in a state of distressed suspense, endeavoring to recollect. This condition is a dissociation of the mental faculties, comparable to the delicate connections between full-charged electrical batteries. The return of the recollective instincts is variable and as mysterious as is its disappearance. In some cases, the mental disturbance is traceable to some physical cause, while in others it is impossible to define its etiology.

The foregoing condition in a minor degree is a common occurrence for nearly every normal mind, but, it is passed without serious consideration, scarcely noticed. Thus, we may be thinking of, or talking about, some particular individual or object that is very familiar to us, but, for the moment, often for some time, the name has escaped from memory, and the more we endeavor to recollect it, the more perplexed we become. Still, we remember everything in connection with the particular object, even the features; and sometimes remember to have forgotten this identical thing before. In this instance, we remember to have forgotten and remember also to have recollected! It is this condition of memory, so familiar to most people, that the "artificial memory-faker" guarantees to cure, and, because of its being so embarrassing and often provoking, induces many "suckers to bite".

Augustine's Discourse on Memory

Among all the writers upon memory in all ages, there is, perhaps, not a more beautiful, more lucid analysis of that faculty of the mind than was written by Saint Augustine in his "Confessions" (Book tenth), who lived in the fourth century. This most noble, pious Christian, through his metaphysical teachings, was the cause of much of the inspiration that culminated in the overthrow of idolatry. Let us follow him a little way in his deep introspection:

"I will pass, then, beyond this power of my nature, also, rising by degrees unto Him who made me. And I come to the fields and spacious palaces of my memory, where are the treasures of innumerable images, brought into it from things of all sorts perceived by the senses. There is stored up whatsoever besides we think, either by enlarging or diminishing or any other way varying those things which the sense hath come to; and whatever else hath been committed and laid up and which forgetfulness hath not yet swallowed up and buried. When I enter there, I require what I will to be brought forth, and something instantly comes; others must be longer sought after, which are fetched, as it were, out of some inner receptacle; others rush out in troops and, while one thing is desired and required, they start forth, as who should say, "Is it perchance I?" These I drive away, with the hand of my heart, from the face of my remembrance.

"There are all things preserved distinctly and under general heads, each having entered by its own avenue; as light and all colors and forms of bodies, by the eyes; by the ears, all sorts of sounds; all smells, by the avenue of the nostrils; all tastes, by the mouth; and, by the sensation of the whole body, what is hard or soft, hot or cold, smooth or rugged, heavy or light, either outwardly or inwardly to the body. All these doth that great harbor of the memory receive in its numberless secret and inexpressible windings, to be forthcoming and brought out at need; each entering in by its own gate and there laid up.

"Nor, yet, do the things themselves enter in; only the images of the things perceived are there in readiness for thought to recall. Which images, how they are formed, who can tell, though it doth plainly appear by which sense each hath been brought in and stored up? For, even when I dwell in darkness and in silence, in my memory I can produce colors, if I will, and discern betwixt black and white and what others I will: nor, yet, do sounds break in and disturb the image drawn in by my eyes, which I am reviewing, though they also are there, lying dormant, and laid up, as it were, apart. * * * And though my tongue be still, and my throat mute, so can I sing as much as I will; nor do those images of colors, which notwithstanding be there, intrude themselves and interrupt, when

another store is called for, which flowed in by the ear. Yea, I discern the breath of lillies from violets, though smelling nothing; and I prefer honey to sweet wine, smooth before rugged, at the time neither tasting nor handling, but remembering only. These things do I within, in that vast court of my memory."

Such depths of reasoning and such philosophy in the dark ages hardly seems credible. Augustine's keen discriminative classification of ideas is seldom surpassed in this day; yet, this mental analyzing was done fifteen hundred years ago! His lively discernment and independence of reasoning in that age of stoical orthodoxy, must have thrown him into a perilous position, since that was the Manichean epoch of a sectarianism that boasted of higher principles of truth than were taught by Christ.

A mind that is pregnant with obnoxious and repulsive memories works its malignant changes upon the physical features and the expression of its possessor, usually by slow degrees; but, in some instances, such as the concealment of a dastardly crime, the malevolent countenance appears in a remarkably short time. We have a few well-authenticated cases in which the hair has changed from its normal color to a complete gray within twenty-four hours. The memory that harbors a profound secret of guilt must be a perilous and dreadful burden to its owner, both physically and mentally. The victim is in constant worry and dread. A memory thus affected becomes an abnormal memory, in that it passes from a normal or physiological state into an abnormal, or pathological state. Its condition in this state affects the whole mind similar to the action of a cancer upon the physical body. It undermines the strength of the intellect the same as a malignant infection undermines that of the body.

An Example of Abnormal Memory

I wish to ask the reader's indulgence for the report of an illustrative case of abnormal memory. The subject was a man, fifty-two years of age, with a good family-history and likewise good personal history up to the age of thirty-four. He was an unusually well-developed physical specimen of manhood, of Scotch-Irish descent; was married and the father of two children, a girl and a boy, twenty and sixteen years old, respectively. When I was first called to see him professionally, he was in a state of profound melancholia, which alternated with attacks of insanity. This condition was first noticed as attacks of melancholia, coming on at variable intervals of gradually increasing duration and severity; the maniacal manifestations appearing several years after the first attacks of melancholia.

I obtained as complete a history of the case as possible; kept the man under close observation for a month, during which I grew, as it were, gradually into the conviction that it was a case of guilty conscience. Yet, no one, not even his wife, ever suspected him of being a criminal. On several occasions, he had been foiled in an effort at suicide, each time the instrument chosen for the deed being a knife. His people were opposed to having him committed to an insane-asylum, and they guarded his true condition from the public as much as possible. At times, he would become rational and would discuss with a friend his condition, stating that he was conscious of all of his acts and language, but, said that he could not prevent doing it, to save his life.

During one of his most rational periods, one day, I induced him to accompany me on a squirrel hunt, having as my object a scheme of getting into his confidence and sharing his secret, having become convinced that he had one, although I had not the slightest idea of its nature. I watched him closely for an hour or more, endeavoring, through his conversation or actions or some maneuver, to catch a clue; but, nothing favored me. He was unusually communicative on this occasion, which afforded me a feeling of more freedom in quizzing him. In short, I tried every way to induce him to "start something", but, gave that up. As a last resort, after some pretended uneasiness, I obtained from him a pledge of absolute secrecy, then told him of an imaginary occurrence involving myself to no little extent, as I had him believe. He pondered over my story for some minutes, all the time nervously breaking into small bits a straw of grass. I almost knew that his secret was near to the surface, so, I again cautioned him to guard my "secret" carefully, and that I could trust him to do so.

Then, suddenly, he turned his eyes upon me and said: "Doctor, I can tell you something that no human being knows but myself, and I've often thought that it was partly the cause of my 'spells'. (He spoke of his affection always as "spells.") He was greatly agitated and so nervous that I feared an explosion or a nervous collapse. After I had assured him of my fidelity and had talked in a way calculated to calm his increasing restlessness, he proceeded to unfold to me his long-guarded secret, which, indeed, was

sufficiently grave to have unbalanced the strongest mental organism. In keeping with my promise of secrecy, I may not divulge the story he told me, and which I am quite sure was true. It was one of murder and robbery of a trusted companion and a former partner in business, in a remote section of the far West, when he was thirty-two years of age. The murder and robbery were the deeds of a despondent lovesick and homesick man. Following a debauch, in which memory began to reproduce all those depressing events, the return of soberness then would overwhelm all his faculties of reason. He was momentarily overcome by an insane desire for the realization of an intense longing.

Although eighteen years of profound secrecy had burdened his memory, even to the point of seriously deranging his mind, yet, he related to me the particulars of the tragedy with a minuteness of detail and apparent freshness as though but an incident of yesterday. His recollection of this incident was, indeed, remarkable; demonstrating that the one sealed cloister of memory, becoming cankered had infected the whole intellect.

Conclusions as to the Nature of Memory

The degenerative effects of emotions, especially those of anger, grief, disappointment, and worry, upon the cerebrating function of the brain are very similar in their effects: all have a tendency to produce a perverted, incoordinated cell action; that is, uncontrollable or involuntary impulses. The operations of the intellectual faculties under the influence of what we may term negative emotion or an emotional disturbance caused by anger, grief, dread, fear, and so forth, are temporarily involuntary and wholly free from the subject's control. The return to normal varies with the individual temperament; but, the tendency is toward a reasonable equilibrium, unless it be a case of long standing or of a chronic type like that of my friend, and in such cases the memory withstands the receding waves of emotion just in proportion to the strength of intellect, until finally comes the eruption; and then the victim becomes a lunatic and maniac with each recurring wave.

After familiarizing ourselves with the physiological processes of cerebration, we must conclude that the exercise of our intellectual functions is attended with cell activity in the gray matter of the brain. This being true, it is but reasonable to assume that memory is only a reproduction of activity upon the part of the same cells that were emotionally affected in the original instance. Further, that the memory is a part of the intellectual "plant", bearing the same relation as does the storehouse in an industrial plant, which always is by far the largest department of any factory.

Prenatal Infection Due to Common Cold

By Clifford E. Henry, Ph. G., M. D., Minneapolis, Minnesota

THERE have often been reported cases of infants born with one of the exanthematous diseases. It has been only in recent years that the medical profession has looked upon a common cold as an acute infectious disease. Many a time patients having "grip" have been sent to the hospital, but now none of the best-regulated hospitals will take such cases unless there are facilities for isolating them the same as cases of other infectious diseases. How often have we not seen a cold go through an entire family or a nursing baby contract a cold from its mother.

Recently I have had a case that has proven of intense interest to me—that of the second child of a German mother. Here is the record:

April 16. Baby born 10 a. m. Normal delivery. Mother in labor about twelve hours. Baby looked normal and well nourished. April 16. At 5 p. m., temperature 104° F. Careful examination could find no external cause. April 17. At 9 a. m., temperature 104.6° F. Another careful examination disclosed no cause. Doctor Rodda saw the case in consultation and gave his opinion that there had been a hemorrhage into the brain-substance. At 9. p. m.: temperature 104.6° F. I ordered castor-oil, 2 drams. April 18. At 8 a. m., temperature 104.6° F. Child had four dark-green stools. At 7 p. m., temperature 104.2° F. April 19. At 7 a. m., temperature 102.6° F. At 8 p. m., temperature 102° F. April 20. At 8 a. m., temperature 101° F. At 8 p. m., temperature 104° F. Some pustules were forming about the neck and in the axilla. The stools were very dark and very offensive. April 21. At 10 a. m., temperature 104° F. The child had refused to nurse ever since birth and did

not retain water. I gave an inunction of 10 grains of mercurial ointment. At 9 p. m., Doctor Rodda saw the patient again in consultation. He did not believe that it was a case of syphilis, but had no suggestion to offer. April 22, at 1:45 a. m., the child died in convulsion. On the afternoon of April 22, after securing the consent of the parents, Dr. E. T. Bell made a postmortem examination, with Dr. F. C. Rodda, Dr. J. P. Sedgwick, and myself present.

The Necropsy Report

External appearances: The body is that of a well-developed, poorly nourished infant, 51 cm. in length. Rigor and lividity present. No edema. Estimated weight about 3000 Grams. (Infant was said to have lost weight considerably since birth, not having taken nourishment well.) Anterior fontanel 4 cm. anteposteriorly and 2.5 cm. transversely. Metopic suture present. Posterior, posterolateral, and anterolateral fontanels represented by angles between the bones. Body slightly jaundiced. Skin slipped off, leaving a raw surface in a band around the neck about 2.5 cm. in width. Similar areas, denuded of epithelium, noted on inner surfaces of both arms and on corresponding opposite surfaces of thorax. On inner surface of left thigh a vesicle about 1 cm. in diameter is present. Skin of dark color and very loose. Apparently this represents a collection of fluid underneath the stratum corneum. This loose layer is readily pulled off, exposing a raw surface.

Internal anatomy: Peritoneal cavity contains no excess fluid and no adhesions. Appendix shows no gross lesions; its position is retrocecal. Mesenteric lymph-nodes very small. Pleural cavities: No excess fluid; no adhesions. Pericardial cavity: No excess fluid; no adhesions. Heart of normal size. No abnormal condition noted, except a yellowish rather soft musculature. Root of aorta shows no lesions. Lungs: In upper lobe of right lung, are found very large numbers of diffuse, hemorrhagic areas near base of lung-parenchyma, occupying 1-4 to 1-3 of area of cut surface. No areas definitely consolidated. Spleen shows tense capsule. Cut surface shows no special markings. Liver of slightly yellowish color, somewhat clouded. Cut surface shows no special markings. Pancreas: Lobulations distinct. No increase of connective tissue. No gross lesions. Gastrointestinal tract: No pathologic conditions found. Adrenal glands: Extensive hemorrhage throughout medulla of both organs. Kidneys of normal size. Fetal lobulations distinct. Extensive uric-acid infarctions of all the pyramids. Cortices slightly clouded; of normal thickness. Bladder: Mucosa smooth and of grayish color. Genital organs: No gross lesions noted. Thyroid gland not enlarged. Brain: No injuries in soft tissues of scalp. No injuries of bones of cranium. Blood-vessels of arachnoid intensely dilated and congested. Some diffuse hemorrhage in subarachnoid space (apparently leakage of blood from extremely dilated vessels). Arteries of brain soft. No gross lesions found in brain. Hypophysis normal.

Microscopic examination: Heart: Slight parenchymal degeneration of fibers. Lungs: Numerous large hemorrhages; no pus. Spleen: Normal. Liver: Some fat; some parenchymal disintegration. Pancreas: Normal. Adrenals: Extensive hemorrhage into medullæ. Kidneys: Slight amount of parenchymal degeneration.

Bacteriologic examination: Blood-cultures grew enormous numbers of hemolytic streptococci (streptococcus pyogenes).

On questioning the father, I learnt that his wife had a grip-cold in January and had seemed to get over it, but ever since has had what she thought were slight returns. Her temperature was not taken when entering the hospital, as she was in labor and was taken directly to the delivery-room; however, it was taken soon after delivery and it registered 99.8° F., with the pulse at 118. On the second day after delivery, she complained of pains in her left leg, but I could not find any definite signs of a phlegmasia. On the seventh day, I could very readily outline the branch of that external saphenous artery that extends from the apex of Scarpa's triangle down over the outer side of the knee. At no time was there any swelling of the leg. Her temperature did not reach normal until May 1.

The unusual feature in this case is the fact that the baby undoubtedly was born with an elevated temperature and died from a streptococcic infection, such as often is found in the common cold, or grip. The infection was transmitted from the mother to the child through the blood-stream. None of us knew exactly what was the real cause of the sickness until the postmortem findings were all in.

The University of Minnesota has a very large clinic for newborn infants, and Doctor Rodda made a careful search of the records. There was no record of such elevated temperature at so early a period. Three causes

for early temperature that we had to eliminate were recorded, namely: (1) Infection from the cord. This comes on on about the third day, and there usually is some sign of inflammation about the cord. (2) Toxic conditions owing to changes in the alimentary canal. In this case, the rise of temperature usually occurs after between the third and fifth day, while a good dose of castor-oil will bring it down to normal. Also, there is the starvation-temperature, resulting from an insufficiency of milk, and proper amount of feeding will cause its return to normal. (3) In instrumental delivery, the temperature is likely to rise, owing to a disturbance of the heat-centers.

Observations on the Symptoms and Symptomatic Therapy of Tuberculosis

By H. SCHROER, M. D., Cincinnati, Ohio

TUBERCULOSIS is a disease the symptom-complex of which is an expression of defensive reaction. From its inception to its termination, the defensive symptoms dominate the clinical picture. Our knowledge may be epitomized in the assertion that the disease is the body's response to cellular destruction by the bacillus tuberculosis. The progressive destruction gives rise to the advanced symptoms which may be followed by the death of the body.

It is safe to assert that most tuberculous patients die of defensive rather than of offensive processes. The first symptom is an expression of the effort to restore equilibrium by determining body-energy of reserve to the focus of infection. This gives rise to malaise, irregular pains in the limbs, perhaps headache. It is not probable that these symptoms are due to the elaboration and circulation of soluble toxins. Malaise would be due to inadequate body-energy, pain perhaps to a like condition in the nerves, headache to circulatory or nutritional disturbances.

It must be admitted that the essential nature of intrasomatic processes leaves much room for conjecture. So extensive and profound is our knowledge of the body in health and disease that no physician can explain the essential nature of pain, of fever, and other gross symptoms. The determination of body-energy of reserve then accounts for the premonitory and primary constitutional symptoms of tuberculosis, and it largely enters into the symptoms of the disease at its full and its final developmental phases.

The determination of body-energy has for its purpose the expedition of cell multiplication and cell transudation at the disease foci. These cells have undergone a partial redisposition, defensive in its essential nature, which under satisfactory conditions reduces the affinity between the cell and the bacillus. Given a satisfactory condition of the body, and this reduction of affinity may be further stabilized by immunization with any one of various bacillary products. That there is a complete reversal of affinity or that this can be artificially induced by bacillary extract, is completely negatived by the extensive and complicated therapeutic procedure required. Reversal of affinity is expeditious, progressive shutting off of affinity time-consuming and not always certain.

The Significance of Symptoms

This cell multiplication and transudation fails to hold the process, and the progress of the disease requires additional energy expenditure. If this can be maintained by outside assistance, well and good. If it can not, then the body-tissues as a whole are deprived of a quota of their kinetic energy, leaving them without adequate power to carry on normal processes. Then arise the series of symptoms, because of this abrogation. They vary with the organ and generally express themselves in defective and adynamic functional activity.

Symptoms of defense may be divided into those which are an expression of direct defense and those structural and functional perversions owing to deviations in energy determination. Cough is a commonplace symptom of pulmonary tuberculosis. It is defensive, in that it is an expression of the bronchial effort to remove obnoxious compounds. Without doubt, a persistent cough going on for a long period is a deciding factor in exhausting body-energy. It is justifiable and rational to use sedatives for the bronchial mucosa, to alleviate irritation by reducing responsiveness to irritation. It is further rational to use expectorant mixtures, which

stimulate the bronchial membrane to secretion. This secretion facilitates the removal of mucus. How an expectorant operates in pneumonia, the writer does not know. There is limited ground for the inhalation of various antiseptic mixtures into the bronchi. They probably stimulate secretion and facilitate expectoration. Since an active tuberculous process is at the periphery of the focus, antiseptic compounds inhaled do not reach the active area. If they did, it is improbable that they would exert anything but a transient effect upon the bacilli. The resistance of an organism being inversely as its differentiation, antiseptics sufficient to destroy the bacillary cell would destroy the body. Ether anesthesia has been recommended on purely empirical grounds, and the physician would have some difficulty in explaining its action in the light of the rule above quoted.

The Effect of Drugs

If etherization of the lung destroys the bacilli in the lung without acting upon the vastly more complicated and differentiated lung structure, then all rules of physiology and biochemistry are set at naught. It may be replied that the compound of body-cell with ether groups has specific bactericidal powers which ether alone has not. Why an anesthetized cell should be bactericidal, is a mystery. That its resistance is lowered, is plausible, but exalted beyond explanation. Various compounds have been recommended for intratracheal introduction, but extensive trial has shown them to be found wanting after having been weighed in the balance.

The continual destruction of lung-tissue causes the presence of lung detritus on the foci and in the bronchi. It appears that dead protoplasm excites the exudation of a viscid mucus and a lowgrade inflammation in the mucosa. Whether balsamic oils have any other than a demulcent effect is doubtful. Many preparations are backed by claims that find their only limit in the credulity of practicing physician. The therapeutic procedures outlined are symptomatic. They do not remove the disease, although they maintain body-energy at a higher level than it would be without their interposition. The humanitarian aspects of therapy must not be overlooked. The physician is thoroughly justified in suppressing painful symptoms even though he cannot remove their cause.

The Causes of Pyrexia

Pyrexia is elevation of body-temperature. Strangely enough, the cause of pyrexia is obscure. Various hypotheses have been set forth, but they have not advanced beyond the hypothetical stage. Heat is produced by oxidation, it is also produced by motion, and it may be liberated from compounds whose energy may escape in the shape of heat. Elevation of temperature is usually limited to those conditions engendered by foreign protoplasm. Metabolic diseases as a rule are free from febrile processes. Infectious diseases of a low grade may run an afebrile course, although it is probable that there is some temperature elevation, which, however, has escaped the notice of the attending physician.

Pyrexia in infectious diseases may, then, be owing to the marked increase in activity of cellular constituents because of the presence of foreign protoplasm. It may result from increased oxidation consequent upon the presence of obnoxious groups. It may be due to proteid destruction and liberation of energy in the shape of heat. It may be a defensive reaction. It may be offensive. It may be both.

It has been said that the body is endowed with nerve-centers that liberate excessive quantities of heat and cause the temperature to rise to a point at which bacillary life can not continue. The objection to this is, that the body can not exist at a temperature which destroys bacillary life. Further, the body reactions are mechanical, not intelligent. Intelligence is at the foundation mechanics, but the converse is not true.

As to Antipyretic Measures

We, then, have pyrexia, the cause, the *fons et origo* of which we do not know and can not explain. The practitioner must determine whether fever is beneficent or the contrary; whether it is offensive or defensive; whether it is useful, within limits, or should be entirely suppressed. It is a symptom, not a disease. It is evidence of a pathological process and generally points to the presence of foreign proteid. If a symptom is removed or suppressed, what will be the effect upon the disease giving rise to a symptom? If the symptom is an expression, and the only expression, of the disease, its suppression should be of advantage in fighting the disease. A symptom of offense, for example.

But, a symptom of defense is an expression of the body effort to remove a disease. Is it, then, wise to remove the symptom or suppress it?

Antipyretic medication, then, may act in one of three ways. It may, by antiseptic

activity, inhibit cellular destruction; it may suppress oxidation; or, it may inhibit cellular multiplication. A fourth method, that of suppressing or depressing thermogenetic centers, stimulating thermolytic centers or disturbing in one way or another thermotaxic centers, appears to the writer to come under the head of experimental physiology rather than under clinical medicine. If fever is the effect of foreign proteid, then it is rational to use antipyretics that act by nullifying foreign proteid, because this process is the cause of the disease. If it is the result of oxidation of excessive activity calculated to suppress foreign proteid, it is not wise to suppress fever.

It is very difficult to establish a definite line of demarcation and isolate these two conditions. Physicians generally regard elevation of temperature as dangerous and make an effort to suppress it. Whether they are justified in suppressing the symptom without attacking the cause of the symptom, is one of the debatable questions in medicine.

Anorexia and Digestion

Anorexia is a consequence, primarily, to the perversion of the digestive-assimilation system, which, by reason of excessive energy elaboration at the focus, disturbs the nutritional balance of the cells. It is obvious that if the cells can not utilize nutriment, there is a reflex to the digestive apparatus, which, thereupon redisposes accordingly and does not digest food. To the writer, it appears foolish to give digestant elixirs for a constitutional condition. It is necessary to restore the balance between digestion and assimilation before the proper digestive processes will go on. Fats, being easily assimilable and made easily digestible, are sometimes utilized when all other comestibles fail. Measures designed to restore equilibrium between digestive assimilation are of the first importance in treating this condition.

Rest as a Therapeutic Measure

Hilton, in his famous classic "Rest and Pain," gives the simplest therapeutic procedure for restoring this perversion of the digestive-assimilative process. Unfortunately, the physician is in contact with a condition which requires more than rest to accomplish its inhibition. Rest is most essential in the therapy of tuberculosis, and it is probable that the nutritional balance can thus be restored and the process inhibited in very early cases. In more advanced cases, which generally come to the physician, this measure requires supplementary aid. Rest permits the full determination of body-energy, but, often this is not sufficient to meet the process acting upon and in the body. This is particularly true in tuberculosis.

It is admitted that recovery from tuberculosis infection would average close to one hundred percent if a physician came into control of the patient when the disease yet is incipient; but, alas for the vanity of human expectations, the patient either ignores the condition until a sudden arterial hemorrhage tells him in language not to be misunderstood that a serious process is affecting his lungs or he avails himself of various alcohol-containing proprietaries that mask the symptoms and activate the process until it has reached a stage practically beyond control.

The multiplicity of remedial agents for this disease is sufficient to throw suspicion upon their efficacy. It is a general rule, and a safe rule, that complicated therapy implies very limited understanding of a disease-process, although the converse is not true.

Bacterin-Therapy

As stated in the opening paragraph, the affinity of the cell for the bacillus may be taken up by an extract of the bacillus and the disease-process be slowly inhibited by this means. The inhibition is effective, that is, in many cases. Caution is necessary, for, the hypersusceptibility engendered by the presence of the bacillus may make injections of bacillary extract dangerous and only serve to activate the process.

If the nutrition-assimilation system is restored to equilibrium and the disease-process by rest in bed reduced to a low grade of energy-determination, the cautious administration of affinity-satisfying groups is, without doubt, an effective method for inhibiting the process. That the group does not endure destructive affinity, is admitted. If it did so, it would not be material what the stage of the disease, how extended the perversion of assimilation or how active the disease. Successful therapy means, the elaboration of compounds of this character. Until then, therapeutic procedure will always have the element of uncertainty.

Fallacy of Optimistic Statistics

The mortality rate of disease is an index of the therapeutic merits of various remedies. Despite the best of remedies, the mortality rate from tuberculosis is about as high as it was a score of years ago. The diminution

in a number of cases has been ascribed to better economic conditions, better housing, food, and other factors that are supposed to make life more worth living. Many physicians are obliged to report death as owing to empyema or abscess of the lung, when, as a matter of fact, the case was one of simple tuberculosis. Families object to having the true cause of the disease given. There is ground for asserting that diminution in mortality is more apparent than real. Statistics, on the whole, will bear liberal interpretation.

Many other symptoms of tuberculosis have not been considered, first, because of lack of space and, second, their discussion is fruitless. As to their essential cause, nothing is known; as to their cure, it is by empirical medication.

Some day, the activities of the body in health and in disease will be worked out with mathematical exactitude, then every symptom will have its symbol, every disease its cure. Until the dawn of that millennial day, the physician will struggle with half-interpreted processes and speculative therapeutic procedures, while the laity will measure his knowledge of the body by the size of his automobile and the cut of his coat. Need any more be said?

An Old Doctor's Life Story

An Autobiography

By Robert Gray, M. D., Pichucalco, Mexico

[*Continued from August issue, page 579.*]

ON MOST plantations, the peon has had land free to plant in corn and the privilege to raise pigs and chickens, besides the free rations and pay for his labor—a chance that would have enabled a German or an Italian to have bought and paid for land to make a ranch in three years. The peon however, is more miserable and deeper in debt at the end of the same period, owing to his indolence and vices; indeed, many do not even attempt to raise corn, yuca, sweet potatoes, and bananas, all of which thrive here like evil weed, without the slightest care. Where I plant sweet potatoes, it takes two years to kill them out, and I have to treat okra as an evil weed, leaving of it what I want, as, once started it comes without sowing. The same is true of tomatoes. I get 10-pound cabbage-heads from the seed, placed where I want them to grow, within ninety days. Banana plants continue to bob up where I have been trying to destroy them for ten years. Ninety percent of peons have nothing of all this and not one planter in ten has the semblance of vegetables growing. I have nothing but okra and sweet potatoes and tomatoes at this writing (summer 1914) because the grasshoppers cleaned up everything else before I knew they were on the ground. They have been here for six years, but have never damaged my garden before. These voracious creatures swarm in till, in a few minutes, they are six inches deep all over the ground, thus a bean- or cabbage-patch is cleaned up in a jiffy.

The Terrible Grasshopper Plague

From your newspapers I see that you folks are all measurably ignorant about this destructive grasshopper pest. Those that swarm in on you are bred down here. They swarm in here from the far south and lay their eggs. The male's copulation-organ is a hard sharp spike, somewhat like an orange-thorn. The fertilized female deposits about seventy eggs, enclosed in a gummous covering—after which it dies. The eggs hatch in twenty-one days; as soon as hatched, the brood begins to hop and to eat. After traveling thus for three months, feeding and maturing, they are in condition to start on their flight northward. They leave not a green thing standing while they are growing. While still small, they fill all gulleys and ditches that are in their way, making bridges for those behind to pass over. People have tried in vain to destroy them, the civil authorities calling everybody out, and all battling with them for days at a time.

They cross the ocean and breed in Central and South America, the young brood to come here, and coming with a 10- to 30-mile front. This year they came in an unbroken cloud for some ten hours, and upon alighting, their breeding-ground covered approximately 2,000 square miles in this belt. They flew away in early August, to devastate your country, and

there will be another brood ready here in December, likely to die there in the north. Although the temperature rarely falls to 50°F., still, the cold rain and wind usually have killed them when lasting for four or five days. There are none here, after they fly away, till a new army comes. They are here but a few days in the laying-period. Sometimes (always, I supposed) a large percent are not ready to lay here and proceed on to the deserts of northern Mexico to lay.

Your people are exercised about guarding against them next year, by locating the ground that is infected. Not one egg nor a hatched one will live over a frosty night, they are so thoroughly tropical. Next year, it is said by the old people, will be the last of them, as they come something like every thirty or forty years and continue seven years. They never continue where they breed, longer than to be able to fly away, and during all of the six years of their present scourge they have left in the same direction toward your country, after arriving here from the same southern point of the compass.

The press here and in South America call them locusts, but they bear no affinity to the 17-year locusts I remember to have seen twice in the United States, which come full-grown and winged from a hull split on the back, and resemble an ugly bug before the locust is liberated. That animal, or insect, splits the branches of trees with a needle-like sting, to lay eggs in, which later drop out and penetrate the ground, and come out full-grown punctually after seventeen years. They do not migrate widely, although thoroughly ravaging the crops where they exist. They build a mud house over their point of exit from the ground, there remaining till the winged creature comes from its cocoon; and only one comes out of the same hole. Hogs fatten on their larvae.

The little wretches start on their career of destruction here not bigger than a healthy flea, and almost as lively, hopping and jumping and climbing any plant or bush that has green leaves.

I have dwelt on this extraneous theme at some length, because these pests have damaged this region of Mexico almost as much as the revolution has entailed, and left desolation wherever they passed the night on the way to their invasion of your green fields; and, also, because it seems these creatures are not well understood among you. Some pass here without stopping, and they may arrive and lay their eggs among you, although rarely in time to develop winged ones before cold would destroy them. Unless one is familiar with their habits, the act of laying eggs may not be noticed by casual observation, as they leave soon after this duty is done. It seems to me that their flying-speed will reach 40 miles an hour, so that not many days are necessary for them to reach Texas and New Mexico.

It has recently been published that a species of vaccine has been discovered in Africa that, deposited on green plants where the young grasshoppers are feeding, will cause an infection among them, which spreads with such rapidity that they all die in a few days. There seems to be so much in these reports that the government of Argentina has ordered some of this preparation; for, that country is alarmfully infested, and it is asserted that the invasions reach South and Central Americas from Africa, to breed their ruinous hosts in four months, which then are ready to propagate anew and extend their conquest northward. Their last invasion here coincides with the time when they were devastating Kansas and other western states of your country, since when they seem to have been absent until this present incursion, which has penetrated clear to the state of New York.

There are leagues and leagues of land here where not a stalk of corn, rice, banana and papaya plant or any other green thing remained behind the rapacious plague. Fortunately, some of the corn grew up afterward and has made half a crop on some fields and much less on most ground, but none in many places. Bananas though, come out again all right but, the papayas were completely destroyed, so that I shall have no more fruit from my late fine grove. People will plant for a winter crop of corn, and that may prevent famine, though we are sure to be cleaned up again next summer, when you may expect your contribution to be demanded. The other past five years of their ravages here they passed in strips of 5 to 10 miles wide, leaving others untouched; but this time they came with unbroken front, as broad as the southern peninsula of their starting-point.

More About the Conditions and Future of the Peon Class

Now, in the wake of such pestilence, together with the maintenance of hostile hosts of rebels and federals for nearly four years (of whom more than a thousand were slain in the district, mostly residents here), comes the call of Carranza for contributions to support the standing army, which the papers

of Mexico City speak of as 20,000, that is to occupy this southern belt till there is no more rebellious lust lurking in the fiery heart of the proud denizens of this torrid realm. The amounts assessed range from $10 to $3,000, from the small ranch to the regular plantation. I am unable to conjecture how many of them will get the money to pay, and from whence. There is nothing here to sell. The rubber has not been harvested for years of wartime, and now [1914] has no value, owing to the convulsion in Europe.

In the most optimistic light, we are in a bad pickle; still, it all is worth the price, if the utopian dreams of permanent peace and elevating prosperity shall be realized. We may be good down here, under stern and pressing compulsion, long enough to learn that it will pay to be good all the time. If the peon rises, phenix-like, not exactly from out of the ashes, still, from an abyss of degradation little less unpromising, the haughty intellect will become permanently dominating and bend an unflagging energy to facilitate mutual prosperity. It is necessary for spiritual Mexico of the aristocratic and Catholic elements to realize the utterly hopeless impossibility of return as the ruling despotism of the country, to establish internal peace of permanent duration.

The transformation of the peon to the realization that he is something superior to the insensate machete he wields, with the actuating influence that he is the legitimate guardian of his emancipation instilled into his benighted mind, would render new revolutions impossible, for, such a peon would quickly betray the preparations for such nefarious undertakings. He would become a watchful spy; and, where his majority over his opponents is as from seven to ten to one, it were impossible to do anything on a revolutionary scale without some inkling filtering into his ear.

That time there will be no political clubs of intellectual Mexico. There will be no secret conventions of the clergy. Conspiracy will be more difficult than ever before. The United States will not be the hotbed and fostering shelter of revolutions, if the pretentions of the Constitutionalist vanquishers of the late usurpation be respectably redeemed. And, they now have the superlative opportunity of all political history, practically under the protecting wing of the United States, the sympathies of whose people have been inflexibly in favor of the rebels, in a degree that the government could do no more than masquerade behind the specious screen of diplomacy—though the president gave Huerta no cheering smile—and is ultimately triumphal with his unpopular policy of moral force that spared Mexico and other populous cities of the country the rapacious sacking of fire and blood, so determinedly threatened. But, that moral force was well backed by the suasive argument of nearby and the not distant available armed auxiliary potency, which exercised a moralizing influence over the subsequent tendency of Francisco Villa, that Napoleonic wizard of Mexican revolutionary victory, where he should have been beaten many times. But, it must be remembered that, while the federals often fought with a heroism worthy a better cause, they were not heart and soul arrayed against their antagonists, in principle, to crush constitutional liberty, the great majority being forcibly enlisted. And it now seems that the private soldiers are not inclined to join in any new revolution. I have talked with a number of them, who assured me that their companions were glad to be released from service and were going home to work in peace, resolved to be soldiers no more against their triumphant countrymen.

The utterances and actions of Carranza, since he reached Mexico City, have worked, so far as known here, a material revolution of sentiment here, which had been stimulated before by visions reflected by the Huerta representation of the revolutionary leader and the monstrosities of the revolution, very largely confirmed by the conduct of rebels here, in rude contrast with the lawful discipline of the federals, who committed no depredations on private persons and property.

It may be that the new authority will suppress the manufacture of rum, the only method to control the drink vice of the peons; which though, might provoke them into revolution. Still, the temporary suppression of the sale of rum has not given rise to incipient riots, so great is the fear of the order to shoot in the act disturbers of the peace. Rum has been the predominating factor that held peons in abject degradation of plantation servitude; and it will be rum, directly and indirectly, that will hinder them in becoming worthy of the bequest the revolution has bestowed.

Naturally, Carranza and his coworkers understand the peon problem, as peonage is far more barbarous in central and northern Mexico, where the climate is cold, than such enthralment is down here, where there is no cold and where fruits and vegetables grow all the year around. Bananas, the real staff of life of the peon class here, do not grow in

central and northern Mexico, nor can two or three crops of corn be harvested there every year, as is possible with us. Those magnificent bananas that are exported from here to the United States grow like the most vicious weeds along the border of marshes, where nothing else useful, save cocoanuts, will grow, producing bunches of a size that tax a strong man's strength to carry. This is a veritable Eldorado for the poor and miserable, if only they could be humanized. These people are acclimatized and breed like goats, and, if their children were not the born victims of vice, a healthy population would develop in three decades. As it is, the females are mothers at the early age of twelve years and to a large extent destroyed by vice, even in this horrible depravity.

The True Meaning of the Revolution

The reprisals of vengeance taken by local revolutionists in this belt after the arrival of the forces sent by Carranza—in the belief, presumably, that new revolts had been started—have been so monstrous that they better remain untold. However, what seriously belies such accusation is the fact that the press of Mexico City has not spoken of it, but, instead, has announced the disbanding of the federal troops here; furthermore, Gen. Jesu Carranza, who came as chief commander of the troops sent from Mexico City, stopped this farcical butchery immediately upon his arrival. It is probable that exaggerated reports of local chiefs are responsible for the sending down here of such a large division of seasoned soldiers. Right here where I live, considered the hotbed and nursing-cradle of revolutions, not one man has manifested an intention to take issue against Carranza. The same people revolted against Madero, after serving him before he was in the presidential chair; they also declared against Huerta immediately after being advised that Madero was vanquished. Now, the last mother's son of them seems pacifically obedient to Carranza—maybe because there is a formidable hostile force and the country here is heartily sick of warfare.

I have had a horrid dread of the consequences of rebel triumph, convinced that none but an ironhanded despotism would be competent to cope with the gigantic problem of ruling Mexico. Now, though, I am, half-unwillingly, persuaded that I studied the situation with hardly more than a superficial passing quest for it true inwardness of the situation, and without prying deep into the profound mystery. I realize that I did not regard the entire process of those intricate vicissitudes, from the French intervention to the victory by Carranza, as the inexorable march of evolution: the despotism and regenerating and developing genius of General Diaz being necessary to create the Mexico of 1910; the hypnotic idealism of Madero being required to conjure the specter of moral force into a gigantic magnitude sufficiently formidable to drive the material mechanism of Diaz from the field of manipulating activity; the horrors of the tragedy of Madero being needed to arouse popular resentment to such a degree as to render the development and triumph of the Carranza opposition feasible and possible. Now Madero is enshrined as a martyr to the apostolic advent of Mexican liberty. The public mind is enchanted and holds Madero in higher reverence than did the Arabs who enthroned Mohammed at the same stage of his career where Madero perished in his altruistic crusade.

[*To be continued.*]

OUR FLAG

Flag of the free heart's hope and home!
By angel hands to valor given;
Thy stars have lit the welkins' dome,
And all thy hues were born in heaven.

Forever float that standard sheet!
Where breath's the foe but falls before us,
With Freedom's soil beneath our feet
And Freedom's banner streaming o'er us?

—*JOSEPH RODMAN DRAKE*

What Others are Doing

EXPEDITIOUS METHOD OF DETECTING TYPHOID BACILLI

Somewhat serious objections to the serologic diagnosis of typhoid fever are, that the existence of the disease can be demonstrated only after the disease-process has continued several days, as is pointed out by Harry Koenigsfeld, of the Policlinic at Freiburg i. Br. (*Muench. Med. Woch.*, 1915, p. 130), while the method by no means yields definite results. A positive showing, especially the Gruber-Widal reaction, does not prove typhoid fever to exist, but merely that antibodies have been generated in the organism, possibly years ago; furthermore, immunized persons also give a positive Widal reaction, sometimes very decidedly so—a fact of importance in dealing with groups among whom prophylactic inoculation is practiced. Then, again, this immunization so modifies a subsequent attack that the clinical symptoms do not conform to the typical characteristics of the disease.

These considerations make the earliest possible discovery of the pathogenic organism itself highly important. While the typhoid bacilli can be demonstrated in the feces and urine, any halfway reliable results may not be looked for any earlier than after the second or third week; they can be detected in the blood in the earliest stage of the attack—to the extent of 90 percent on the first fever-day—and thence, often, far into the period of convalescence; in fact, Kutscher (a co-laborer with Wassermann) maintains that under favorable conditions the bacilli can be detected in every typhoid fever patient, without exception. So, it is that all clinicians and laboratories agree in pronouncing the microscopic test superior to every other known diagnostic method.

Now, a considerable number of methods for the culture and identification of the typhoid-bacillus have been proposed (notably by Casrellani, Conradi, Schottmueller, Schueffner, Drigalski), but virtually all, as Doctor Koenigsfeld correctly says, suffer from the objection that they are too complicated to serve under ordinary conditions (outside the laboratory) and require too much time—two to three, even four or more days—to consummate.

A marked advance in this direction was made by Conradi when he added bile to the blood to be tested, although his idea of "enriching" the culture-medium was fallacious; for, bile is not a good nutrient, but it acts by preventing coagulation of the blood and destroying the bactericide action of the serum. A particular advantage consists in the fact that one can operate with a much smaller amount of blood than heretofore; while moreover, not infrequently two days suffice for a definite diagnosis, although two or three days may pass before merely enough of the culture has grown in the bile medium to permit of identification tests. Subsequently Schueffner thought to improve Conradi's method by combining it with that of Schottmueller's (the latter mixing venous blood with liquefied agar and pouring out on plates); a method lauded by Jacob, but which, to the author, possesses no advantage, while being cumbrous and time-robbing.

Finally, Doctor Koenigsfeld thought of combining the three processes, of the so-called "enrichment" of the typhoid-bacilli in bile, the cultivation on a solid culture-medium, and the differentiation of the parasites, all in one procedure, thus not alone gaining in simplicity, but tending to reduce the time element to a minimum.

In this method, he was eminently successful, according to his report, and the gains are worth while, entirely aside from its cheapness. From 3 to 5 drops of blood, taken from the finger-tip or auricle, suffice for each tube, so that venipuncture is dispensed with; the blood being allowed to drop directly into the culture-tube. And this is done so quickly that contamination by floating germs hardly can occur, and, besides, the bile will kill most kinds, if any do enter, in contrast to the typhoid-bacilli. Thus, in one hospital-case, a pure typhoid-culture was obtained, although this presented a streptococcus complication, while both species flourished side by side with other culture methods. Atmospheric germs, also, can easily be differentiated.

Multiplication proceeds very rapidly, the characteristic colonies becoming visible

already in from ten to fourteen hours. Adding to this the time required for the agglutination-test, it is seen that by means of Koenigfeld's combination-method the bedside-doctor can establish an all-around and absolutely positive diagnosis inside of twelve or sixteen hours' time. At any rate, in the hands of a fully inexperienced man and under the most crude conditions, the diagnosis will be quite reliable or at least establish the probability of the infection, so that he may take all needful steps (isolation, disinfection, etc.) while awaiting the corroborative report from the laboratory to which meantime he has forwarded a specimen of the blood.

Aside from the test-tube experiments, this plan had (when reporting) been employed in the field hospital in the case of 16 patients, and in 14 of these the result was secured in between twelve and (at most) eighteen hours, its correctness being proved by means of smears and the agglutination-test. In 10 cases, blood-slides were prepared according to Schottmueller, and in 3 of these also the bile- and agar-slides (Schueffner); but always the Koenigsfeld slanted bile-tubes were ahead by from ten to twenty-four hours in the matter of typhoid-germ growth. In 5 instances, the bacilli could be demonstrated by the latter method alone, while the slides remained sterile even after being kept for days in the incubator; when, reversely, the former never failed in parallel tests. Furthermore, while the much larger amounts of blood required for the slides yielded but sparse colonies, the slanted bile-tubes with but 3 to 5 drops invariably exhibited a luxurious growth of the pathogenic bacilli. The author calls for widespread experimentation with this new method.

KOENIGSFELD'S TEST FOR TYPHOID-BACILLI

Koenigsfeld's improved bacteriologic test for the typhoid bacillus, as discussed in the preceding paragraph in its clinical aspect, is (*loc. cit.*) as follows:

Two different sets of culture-media are prepared, namely: (1) that according to Endo's formula; (2) that known as the Drigalski-Conradi, except that mannite is substituted for the milk-sugar of the original. Each test tube of the two sets provided receives from 4 to 5 mils (Cc.) of one of the liquefied media and is set aside in a slanting position, to permit the liquid to cool and harden.

When ready for the test, introduce into each of the prepared tubes from 1 1-2 to 2 mils of clarified and sterilized ox-gall, which collects in the hollow resulting from the surface evaporation. Now draw blood from the sterilized finger-tip or auricle of the subject and allow a few (3 to 5) drops to fall into the tube, then gently incline the latter a few times, so that the blood and bile mix and may flow over the entire solid part of the surface. The tubes now are ready for the incubator (setting near a stove will do in a pinch), the temperature of which is maintained at 37°C. (98.5°F.). If typhoid germs are present, they begin to luxuriate on the surface of the liquid bile and thence spread over the solid surface of the medium.

This nutrient medium, at the same time, serves to differentiate the various growths likely to appear; for, only typhoid- and paratyphoid-bacilli grow uncolored upon the Endo agar and also decompose the mannite, with production of acid, and, so, reddening litmus. Colon-bacilli redden both the Endo and the mannite agars. Acid-forming cocci redden the Endo agar, but do not color mannite; nonacid-forming cocci leave both media intact. Streptococci and pneumococci do not grow at all upon either of the two media, or only very precariously.

In the nature of things, the behavior of the germs of dysentery is excluded as a problem. There is virtually no need of distinguishing between typhoid- and paratyphoid-bacilli. However, if desirable, proceed as follows: Inoculate a third tube, containing "neutral red" and cooled in the inclined position, and prepared, as told above, with bile. Typhoid-bacilli do not change the color, but the paratyphoid ones decolorize the red culture-medium. If the latter is only slightly colored, the difference can be observed after a short time.

In addition, there remains the agglutination-test for all cases; still, as a rule, the two-tube method described will answer the purpose. If agglutination is decided upon, the luxuriantly growing bacilli taken from the "slant-tubes" may be utilized directly for the purpose. Inasmuch as the Endo nutrient is not very permanent, one may use in its stead the ordinary Drigalski-Conradi medium, which is not altered by typhoid-bacilli.

The author adds one practical suggestion for the benefit of practitioners who may be called upon quite infrequently to make these culture tests, or for the medical corps of armies in actual war. For these, he says, a central bureau (laboratory) might prepare the stock culture-media and furnish the "slant-tubes," ready for use, upon request. For

transportation, the culture-tubes, naturally, ought to be safely closed with rubber stoppers [or tied over with rubber tissue] and packed in sterile cotton.

ENDO'S MEDIUM AND THE CONRADI-DRIGALSKI MEDIUM

In the preceding article, reference was made to the use of Endo's medium and the medium of Conradi-Drigalski. In order to make these available for the use of our readers, we present the methods of preparation herewith.

Endo's medium is prepared as follows: Prepare one liter of meat infusion three percent agar, containing 10 Gms. peptone and 5 Gms. salt; (2) neutralize, clear and filter; (3) add 10 Gms. C. P. lactose; (4) add 5 mils (Cc.) saturated alcoholic solution of fuchsin. This colors the medium red; (5) add 5 mils (Cc.) of a 10-percent solution of sodium sulphite. This decolorizes the medium as soon as it cools. Then tube and sterilize. This medium should be kept in the dark. On this medium the typhoid bacilli outgrow the colon bacillus; their colonies are colorless, while the colon colonies are red.

The method of Conradi-Drigalski is given herewith: (1) Three pounds of meat are infused in two liters of water for 12 hours or more. After straining, boil for one hour and add 20 Gms. of Witte's peptone, 20 Gms. of nutrose, and 10 Gms. of NaCl. Boil one hour, and filter. To the filtrate add 60 Gms. of agar. Boil 3 hours (one hour in autoclave) until agar is dissolved. Render weakly alkaline to litmus paper, filter, and boil for one half hour more. (2) Litmus Solution: Two hundred and sixty mils (Cc.) of litmus solution (Kubel and Th[illegible]mann) are boiled for 10 minutes. Add 30 Gms. E. P. lactose, boil 15 minutes and decant or filter. (3) Add the hot lactose mixture to the hot fluid agar, mix well and if necessary neutralize to litmus again. Add to the mixture 4 mils (Cc.) of a hot sterile 10 percent solution of sodium carbonate and 20 mils (Cc.) of a freshly made solution of violet crystal (C. P. Höchst), 0.1 Gm. in 100 mils. of distilled water.

The medium contains 13 percent of litmus solution and 0.001 percent of crystal violet. Typhoid colonies are small, blue and transparent. Colon bacillus colonies are large, red and opaque.

A NEW CULTURE MEDIUM

A new colored culture-medium, enabling one to distinguish sharply acid-forming bacteria from others (notably typhoid- and colon-bacilli) has been proposed by L. von Liebermann and J. Acel, of Budapest (*Deut. Med. Woch.*,), as follows—directions to be strictly adhered to:

Put 1 kilo of triturated horse-meat into 2 liters of water and boil for 1 hour; when cool, filter. Add to the filtrate 20 Grams peptone, 20 Grams nutrose, 10 Grams sodium chloride; again boil one hour and filter. To this second filtrate, add 60 Grams agar and heat one hour in the autoclave. Cautiously add sodium-hydrate solution until showing slightly alkaline to litmus, boil thirty minutes, then filter hot in the sterilizer. To each 100 Grams of the filtrate, add 1.5 Gram milk-sugar in substance and 30 mils (Cc.) of a 1-percent aqueous solution of congo-red. Finally, sterilize.

In contrast to acid-forming bacilli, colonies of bacillus coli raised on this congo-nutrient are surrounded by a deep-black circular or ragged area; typhoid-colonies, on the other hand, are colored more or less intensely red.

TOXIC EFFECT OF NITROGLYCERIN

A discussion of the effects of nitroglycerin on the human system is contributed by W. G. Hudson, medical director of the Du Pont de Nemours Powder Company, to *The Medical Record* for January 20. He says:

"The effects of nitroglycerin upon workmen engaged in the explosives industry are popularly known as 'powder-headaches' and 'powder-knockout,' terms quite suggestive in themselves; but, inasmuch as this substance has been well studied as a medicinal agent, we need not have recourse to any of the less scientific observations regarding its action.

"While it is chemically a nitrate, it does not act at all like other nitrates—saltpeter, for example. It does, however, behave in a very similar manner to the nitrites, and it has been pretty well established that its action upon the economy is due to its transformation into nitrites after absorption. It produces its effects no matter how it may be taken into the system, whether by the mouth, skin absorption or by inhalation of its vapor. The effects seem to be entirely due to its action upon the circular muscular fibres of the arterioles or the nerves controlling them, and, as is well known, its chief place in medicine is that of a vasodilator, along with amyl nitrite, sodium nitrite, and certain organic nitrates resembling nitroglycerin in chemical structure, such as erythrol tetranitrate and mannitol hexanitrate. A good description of the action

of these substances upon the animal economy can be found in Cushny's "Pharmacology"; indeed, they are so well known to physicians that it scarcely is necessary for me to enlarge upon them here.

"Their effects upon workmen generally start with the familiar flushing of the face, headache, and throbbing temples, and it is difficult for one who has not experienced a nitroglycerin-headache to appreciate its severity. The amazing feature of this poison is, the surprising readiness with which it can be absorbed by the skin. Even shaking hands with a workman or examining the chest of one of them sometimes is sufficient to cause headache in one not immune to it. Unlike many other headaches, relief cannot be secured by lying down, which tends to aggravate rather than to relieve the trouble. In severe cases, nausea and vomiting often are present, together with great weakness and prostration. All of these effects are greatly aggravated by the use of alcohol, so that, as a rule, workers with nitroglycerin are a very abstemious lot. I have heard of a few cases in which convulsions and acute mania were said to have resulted, but we have never observed any of such effects in our own experience.

"In spite of the violence of its effects, a tolerance is soon developed for nitroglycerin, so that, while practically all new workmen are sick for the first few days, they soon become immunized to such an extent that they seldom have headaches or other nitrite symptoms, unless they go on a spree during their day off; but, as they have learned by bitter experience that results are sure to follow, it is very unusual to find among such workmen one who is inclined to intemperance even on his day off.

"Of chronic effects, contrary to what one might expect from such an active substance, there seem to be practically none. Dr. George Ebright, of San Francisco, studied the subject at some length among the men of one of our western plants and finally came to the conclusion that they were a particularly healthy lot of fellows (*Jour. Am. Med. Asso.*, Jan. 17, 1914).

"As to the treatment of the acute poisoning, which sometimes is necessary in new men and also in occasional visitors to the factories who have become stricken, none of the ordinary remedies are of any avail. The coal-tar antipyretics and analgesics all seem to do harm rather than good. According to my experience, the best remedy is the hypodermic injection of morphine, which gives very decided relief even in small doses; but, in order to be sure, I generally give 1-4 grain. Prompt relief also is given by the inhalation of chloroform vapor; but, such relief is brief and the headache quickly returns, so that for the chloroform treatment to be effective it must be repeated frequently until the effects of the nitroglycerin have worn off; and, of the two methods, the morphine treatment appears to me by far the less objectionable."

EARLY DIAGNOSIS OF GAS-PHLEGMONS

When shaving with the razor, the scraping-sound produced is a characteristic one over the area of a gas-phlegmon, quite distinguishable from the noise of ordinary shaving, being peculiarly clear-sounding, hollow, and as one produced by a bandbox. In connection with the other facts ascertained, this may aid in early diagnosis, while Doctor Burch, of Krefeld, utilizes this fact in determining the limits of the gaseous area before operating.

ETIOLOGY OF CONGENITAL MALFORMATIONS

Inasmuch as the belief in the "marking" of unborn children continues to fascinate the popular fancy, while even among medical men this pernicious fallacy still has numerous defenders, the subject of teratology would seem to deserve greater attention than is accorded it outside the devotees of biology. The problem, it is true, is a difficult and, as yet, an obscure one; nevertheless, enough is known so that practitioners should be in position to oppose a generalized explanation when confronted by expectant mothers worried to death for fear of having "marked" their babe or by the gabble of the "wise" women when a babe with a "monkey-face" or with fingers missing, or showing other oddities, is born.

What follows is not meant as conveying anything new in this direction, but, rather, to serve as stimulus to independent reading and thinking on the subject of intrauterine malformations and, also, to serve as a possible hint in the diagnosis and understanding of otherwise baffling conditions encountered in grownup patients. The few disconnected brief statements presented are based upon a report (*Muench. Med. Woch.*, 1915, p. 624) of the proceedings of the Medical Society of Leipzig, before which several specialists

demonstrated cases of congenital malformation.

In the first place, two classes of malformation must be distinguished—primary and secondary. The former present a highly interesting—and, indeed, important—theoretical interest to the student of biogeny and embryogeny, but are not here considered; abnormalities, on the other hand, of the second order necessarily directly concern the practicing physician, as will be shown. Specifically, the former, or primary, malformations (in the limited sense) are those dependent upon the inherent forces automatically determining the growth and development of the embryo out of the energized female cell, and these elude control.

As to secondary irregularities in the development of the fetus, they are initiated by causes external to the developing, unfinished organisms, acting mechanically, as against the internal forces of the ovum. And, obviously, the earlier in the career of the fetus a lesion is mechanically inflicted, the more closely the result will resemble and be like a primary malformation; while the more near maturity occurring harm will be like a postnatal hurt. As examples of the latter kind, may be named talipes and other deformities of the extremities resulting from a faulty position of the fetus, contraction of the womb or tubal pregnancy, and, in parallel, postnatally, the deformed feet of Chinese women and the artificially produced macro- and platycephaly of certain savages.

As among the most common recognized mechanical causes, Professor Marchand, the principal speaker, mentioned amniotic cohesions and strictures by amniotic bands (notably Simonard's threads); and this speaker exhibited specimens of fetal amputation, diagonal facial split, exencephaly, malformed extremities, cutaneous appendages, and other defects. However, occasionally a structure may be interpreted as an amniotic connective-tissue membrane, when, actually, it is a pseudomembrane formed out of some coagulable exudate and has been accepted by several writers (and so named) as an intraamniotic membrane. Sometimes such a pseudomembrane envelops the embryo and, in connection with a diseased placenta, may give rise to a displacement of the natural orifices or to cohesion of the digits with each other (web-foot) or with other parts of the body.

Other forms of these abnormalities can be referred to scars formed subsequent to lesions prenatally inflicted, while actual scar-tissue observed at a child's birth not seldom may perplex the accoucheur. These, of course, are the result of a bruise received at a late period of the intrauterine existence. Professor Rille presented a girl of eighteen who had a long discolored scar across the chest and along the arm. It was learned that not long before confinement her mother had received a serious contusion of the abdomen. He also showed photographs of persons similarly marked before their birth. It may be mentioned that according to Fournier congenital malformations of the order considered in this abstract are predominantly encountered in the progeny of syphilitic individuals.

NATURE OF PUERPERAL OSTEOMALACIA

In a survey of the subject of puerperal osteomalacia, R. E. Liesegang (*Zentralbl. f. Gyn.*, 1915, No. 16) points out how Hasselbach and Gammeltoft have demonstrated that the state of pregnancy must be looked upon as a constitutional acidosis—the abounding of diacetic acid in the body-fluids. This conception naturally suggested the acid-theory of puerperal osteomalacia: that this acid carried away the calcium belonging to the osseous structures. However, M. Levy, in 1894, seemed to have proved satisfactorily that an acid cannot be the cause of the catabolic elimination of calcium in gravid women; and this view has largely prevailed.

Now the author, R. E. Liesegang, demonstrates by new experiments that Levy's method of procedure was faulty in one respect, namely, he had comminuted the bones employed too finely. Thus, Levy's objection to the acid-theory no longer is valid, and, says the author, we must agree with the two investigators first named that, essentially, the loss of calcium during pregnancy is connected with the regulation of the blood's neutrality in connection with the acidosis.

This suggests the desirability of watching urinary acidity during pregnancy, using alkalies (as in sodoxylin) when these are indicated. This treatment, it is believed, will also prevent the vomiting of pregnancy, which seems to be due to acid intoxication.

SYNERGISTIC AND ANTERGISTIC ACTION OF POISONS UPON PROTOPLASM

Some interesting experiments in the direction indicated in the title have been conducted by Theo. Weevers (*Rec. d. Trav. Botan.*; cf. *Ther. Monatsh.*, 1915, p. 268),

which, although dealing with plants, ultimately have a bearing upon the combined action of toxic substances upon the animal-cell, and, hence, the prescribing of drug mixtures. In other words, the synergism and the antergism (this is a new term to CLINIC readers!) of remedial agents.

The principal observation thus far made by Weevers is this: The toxic action of quinine, chloral, and amyl-alcohol (the substances most fully investigated) upon the plant-cell is interfered with by the salts of polyvalent metals, of which aluminum, zinc, cobalt, and manganese, in the order given, are named. Even copper, this so highly poisonous element to plant-protoplasm, thus antagonistically influences the above organic poisons. Hydrogen-ions in these cases tended to augment the action; OH-ions generally served to retard it. Where the ionic influence could not be ascribed to the permeability of the protoplasm, the author explains the action by assuming that there is a "contest" between the organic and the metallic substances with respect to the absorptive capacity of the protoplasm.

SILVER-NITRATE APPLICATIONS FOR WHOOPING-COUGH

Some time ago, Ochsenius recommended, for the treatment of pertussis, swabbing the patient's fauces with a 2-percent solution of silver nitrate, repeating this every other day, and daily in the case of infants. Having given this procedure a sufficient trial, A. Keller reports (*Monatschr. f. Kinderh.*, xiv, 1) that he has witnessed remarkable improvement from it after from seven to twelve applications, some of the victims being entirely relieved, even. The swabbing must be done very thoroughly, even though it may start a paroxysm.

SUSPENDED ANIMATION IN THE NEWBORN

A few years ago, Doctor Volland, of Davos-Dorf, described (*Korr.-Bl. f. Schweizer, Aerzte*, 1909) a method successfully employed by himself for reviving apparently inanimate newborn infants, and this statement he has had occasion to repeat last year (*Ther. Monatsh.*, 1915, p. 253). In view of the importance of this matter, it may not be out of place to refer to it here for the benefit of our readers; the method being illustrated by a concrete case.

As a result of delayed birth, the infant, when delivered, was absolutely limp and presented the blue hue of asphyxia. Without wasting time in first tying the cord, the Doctor directed his attention to the inanimate babe, and, after first of all having cleared away the faucial phlegm, his procedure, briefly, was as follows:

Grasp the infant exactly as for swinging it according to Schultze's method of artificial respiration: Hold the head (facing forward) firmly between the palms, shove the index-fingers from behind, into the axillas, let the others hang diagonally downward the back, while the thumbs extended loosely forward over the clavicles. Now press the child's back upon the inner aspect of the mother's approximated thighs, then slowly draw up the child until its entire weight is borne by the operator's hands; but instantly let the body sink down again.

During this latter movement, the thumbs must exert pressure upon the thorax, so as to cause emptying of the lungs, the mother's thighs offering the necessary back-pressure. This procedure, repeated at regular correctly timed intervals, constitutes, of course, artificial respiration; and, if crowned with success, one soon will hear the noise of air rushing through the glottis. Continuing, the child's limbs will stiffen, owing to the contractions of the vitalized muscles, and the returning of life is heralded by the first infantile cry.

Of course, there is nothing radically new in this, the practical feature being the ingenious adaptation of the Schultze method to the circumstances—the unsevered child—in order to increase its chance for life, by delaying the tying of the umbilical cord.

RELATIVE TOXICITY OF ARSENOUS AND ARSENIC ACID

Experiments have been conducted by G. Joachimoglu, at the Pharmacologic Institute at Berlin, to determine, if possible, the relative toxicity of arsenous acid and arsenic acid, previous work in this direction not being entirely convincing. His conclusions have been announced by him in the *Biochemische Zeitschrift* (Vol. 70, p. 144). However, he found that, as stated by others, arsenic acid is the weaker, standing to arsenous acid as 6 to 10, when administered to rabbits intravenously.

Going further, Joachimoglu extended his tests to isolated organs—the ileon of the rabbit, for example—and now the difference became even much more pronounced, although the arsenous compound there also

exhibited high toxicity. When applied to the frogheart, however, the toxicity of arsenic acid is only 1-300th of that of arsenous acid. This phenomenon the author explains by assuming a greater reducing power of the entire organism as compared with the various organs, evidently being lowest for the heart-muscle.

Thus, it is more than probable that arsenic acid itself is not poisonous [or very slightly so], but that in the body it is being reduced to arsenous acid, and this in a various degree, according to different organs in which it is present.

MANAGEMENT OF ARTICULAR WOUNDS

At a meeting of the French Academy of Medicine (*Paris Médical*), a Belgian surgeon has made an attack upon the classical method of treating wounds of the joints, especially the knee, by immobilization, to which he attributes the loss of the articulation as well as of the muscular atrophy so frequently observed. In its stead, he makes a free incision into the joint, excises the track of the bullet and the projectile itself, then closes by suture. After this, he begins cautiously to move the joint, and these movements are continued up to the day when the patient can walk—which is soon. If there is any suppuration, the wound is reopened, but the movements are continued; and they contribute strongly to drain the region better than will any other procedure. This method has proved decidedly superior to all others; however, in wounds of the elbow, it often is necessary to practice immediate resection, to avoid ankylosis.

NEW REMEDIES

Arsenium Amalgam.—According to Dumesnil (*Jour. d. Pharm. et d. Chim.*), an amalgam of arsenium and of mercury of the composition As_2Hg_3, is finding therapeutic application in France, being administered subcutaneously in the form of an oil-suspension. The toxicity is stated to be low. A single dose of 1-5 Gram is injected once a week.

Dymal.—This is the proprietary name of one of the newest wound antiseptics, being the salicylate of didymium and constituting a white odorless powder. Among those who have used this powder on a large scale is A. Engelmann, of the Bethania Hospital at Berlin, and he praises it very highly, in that it adheres firmly to the wound surface, causes desiccation, promotes healthy granulation and epithelization, and is free from irritating properties, while the scars left are unusually soft.

Paralaudin.—This is the commercial designation for a synthetic hydrated morphine compound with bromine—chemically, diacetyldihydromorphine. It is claimed for this and other (dihydromorphine hydrochloride) hydrated morphine derivatives that they are less liable, or even not at all [?], to induce habituation.

Barzarin.—At the Pharmacologic Institute of Tuebingen, M. Salzmann and others are trying to establish the real virtues of a recent introduction called barzarin. It seems to be some semisecret proprietary represented to be a highly efficacious remedy for diabetes (*Arch. f. Exp. Path.*). According to its promoter, it is an alcoholic extract of the bark of a Brazilian tree, this bark being an old-time favorite remedy among the aborigenes.

Testiiodyl.—The object of this new compound is, to present an iodine preparation that shall combine the advantages presented by, for example, iodglidin and sajodin, and by an organic iron. Various German writers (among them H. Loehe, of the clinic for skin diseases of the University of Berlin) testify to its value as a substitute for the alkali iodides, freely yielding the effects of iodine, without any unpleasant symptoms of iodism or gastric disturbances. Testiiodyl is prepared (*Ther. d. Gegenw.*, Jan., 1914) by uniting, by a patented process, iodine with the albumin of coagulated blood, while the erythrocytes appear to be retained in the compound.

Urosemin, recommended for gout and other lithemic conditions, has been tried by P. Wolfer, but he did not observe (*Med. Klin.*, 1912, No. 8) any therapeutic results from its use.

Menthospirin is a new competitor of aspirin and its congeners, being the acetylsalicylic-acid ester of menthol and constituting a yellowish viscid liquid. It has been given in 4-grain doses (in capsules) in affections where its components are indicated; but, according to J. Loewenheim (*Med. Klin.*, 1913, No. 13), the compound is split up in the intestine very gradually, and, hence, its action is milder and more prolonged. He has found it particularly valuable in acute laryngitis and in involvement of the larynx in bronchial catarrh, while relieving the frontal headaches accompanying colds in the head.

Erysol is the proprietary name given by a Polish firm to the well-known phenol-camphor, which is recommended highly as a streptococcicide and for erysipelas.

Miscellaneous Articles

Food Economics and the Chemistry of Cooking—III, IV.

EGGS and milk are the most perfect foods in use by man. From the substance of the egg, are produced the different tissues of the incubated chick. From milk, as a food, result all the fresh tissues of the young growing animal. Hence, in our studies of the chemistry of food, their cooking and economics, it will be well to start our enquiries with these articles of diet.

In the eating of an egg, we do not obtain as much as does the embryonic chick. In the white and yolk, there is a deficicncy of mineral material for the formation of bone. This lack is made up to the chick by the enclosing shell, which parts with a portion of its substance, lime.

When we open an uncooked egg, we find it enveloped inside by a tough membrane, a quantity of glary, slimy, viscous, colorless fluid, which, as everybody now knows, is called albumen, a Latin word for white. Within the white of the egg, is the yolk, chiefly composed of albumen, but, with some other constituents added, notably a peculiar oil containing phosphorus.

We all know that when an egg has been immersed in boiling water for a few minutes, the colorless slimy liquid is converted into a white, opaque substance, to which it owes its name. The coagulation of albumen is one of the most important of the different subjects in our study of the chemistry of cooking. Suppose we do a little laboratory work.

Place some fresh raw white of egg in a test tube or other suitable vessel and gradually heat this. When the albumen attains the temperature of about 134° F., white fibers will begin to form in it, and these will increase until about 160° is attained, when the whole mass will become white, solid, and opaque. If now we examine one of the tubes we shall find that the albumen just coagulated is a tender, delicate, jelly-like substance, that has every appearance to sight, touch, and taste, of being easily broken up. Let us now experiment further.

Take some of the remaining uncooked albumen, or white, in another test tube and heat it as the one before until the temperature has reached 212° F. When keeping this second sample at this temperature, we find that it becomes converted into a hard and tough substance; indeed, a valuable cement may be obtained if we take the raw white of egg and smear the edges of the article to be cemented and then heat them to the temperature of a little above 212 degrees.

These experiments teach us considerable, but which is little recognized by people in general and by cooks in particular; namely, that the proper cooking-temperature of an egg is not 212° (the boiling point of water), but 160° F., that is, 52 below it.

Everybody knows the difference between a tender juicy steak, rounded or plumped out in the middle and a tough, leathery abomination, that has been so cooked as to shrivel and curl up.

The contraction, drying up, and hornifying of the albumen in the test tube represents the albumen of the latter, while the tender, delicate, trembling, semisolid that was coagulated at 160 degrees, represents the albumen in the first. So, while the white of egg coagulates at 160° F., the albumen coagulates at a lower temperature. Hence, to obtain the best result in the cooking of an egg, the temperature should be slightly lower than 160° F.

My directions to my patient's attendant as to the cooking of an egg is as follows: Place the egg into a saucepan of boiling water, then remove the pan, from direct exposure to the fire, to the back part of the stove, there to remain from four to six minutes, according to the freshness of the eggs. By this time, both the white and yolk will be cooked to a creamy consistency, very delicious to the taste and

most easy of digestion. In this way, I have been enabled to nourish newborn infants with white of egg sweetened with milk-sugar.

There are many combinations of eggs, milk, and other ingredients, but, as it is not my purpose here to furnish a cookbook, but rather a treatise on the science and chemistry of cooking, I shall give but few recipes for the cook.

Albumin exists in flesh as one of its juices, rather than in a definitely organized condition. It is distributed between the fibers of the lean portion of meat (i. e., the muscles), and it lubricates the tissues generally, besides being an important constituent of the blood itself—of that portion which remains liquid when the blood is dead, that is, the serum.

Existing thus in a liquid state in our ordinary flesh meats, this albumin is liable to be wasted in the course of cooking, especially if the cook has received only the customary technical education, and, thus, remains in technological ignorance. To illustrate:

Let us suppose a leg of mutton, a codfish, or a salmon is to be cooked in water—"boiled," as the cook says. Keeping in mind the previously described experiments with the egg-albumen, and also the fact that in its liquid state albumen is diffusible in water, the reader may now stand as scientific umpire in answering the question whether the flesh or fish should be put into hot water at once or into cold water, and then be gradually heated to the boiling-point of 212° F.

The "big-endians" and the "little-endians" of Lilliput were not more definitely divided than are certain cookery-authorities on this question.

Confining our attention at present to the albumen only, what will happen if the fish or flesh is put into cold water and then gradually heated to the boiling-point of 212 degrees? Obviously, a loss of albumen by exudation and its diffusion in and through the water, especially so in the case of sliced fish or pieces of lean meat cut across the fibers. Not only will the albumen be dissolved out of the fish or meat, but also the flavoring extractive constituents, especially the ozmazome. Thus much loss of albumen from the material cooked will occur. This loss is represented in part by the scum which rises to the surface of the water.

If soup is the preparation aimed at, then it follows that, if the meat is placed into *cold* water and then allowed to reach only the lowest cooking temperature—say, of 180°—and long continued at this heat, the soup will be more nutritious and of better flavor.

On the contrary, if we desire a piece of fish or flesh to be cooked by water-heat (called boiling) and to retain the greatest amount of nutrition and flavor, then we plunge our material into *boiling* water, thus coagulating the outside layer of albumens and so forming an impervious shield against the exudation of its juices and flavor. Meat or fish, when thus treated, will be cooked in its own juices and will be most palatable.

The following account of an experiment of Count Rumford's is very interesting and instructive and illustrates what I have been trying to inculcate. He says:

"I had long suspected that it could be hardly possible that precisely the temperature of boiling water should be that which is best adapted for cooking all sorts of food; but, it was the unexpected result of an experiment that I made with another view which made me particularly attentive to this subject.

"Desirous of finding out whether it would be possible to roast meat on a machine which I had contrived for drying potatoes and fitted up in the kitchen of the House of Industry at Munich, I put a shoulder of mutton into it and, after attending to the experiment three hours and finding that it showed no signs of being done, I concluded that the heat was not sufficiently intense, and, despairing of success, I went home, rather out of humor at my ill success, and abandoned my shoulder of mutton to the cookmaids. It being late in the evening and the cookmaids thinking, perhaps, that the meat was as safe in the drying-machine as anywhere else, they left it there all night. When they came in the morning to take it away, intending to cook it for their own dinner, they were much surprised at finding it already cooked, not merely eatable, but well done and most singularly well-tasting.

"This wonderful shoulder of mutton was immediately brought to me in triumph, and, though I was at no great loss to account for what happened, yet, it certainly was quite unexpected, and, when I tasted the meat I was very much surprised, indeed, to find it very different, both in taste and flavor, from any I had ever tasted. It was perfectly tender, but, though it was so much done, it did not appear to be in the least sodden or insipid; on the contrary, it was uncommonly savory and well-flavored."

From this time there dates the conception of the fireless cooker, which originated in

Norway. The fireless cooker (in these days of high-priced meats) should be in every household where food economics and conservation of living-resources are so much needed. But, the high price of this utensil prevents its general use. However, understanding the principle involved in its structure, it ought not to be hard to construct a homemade contrivance.

A. T. CUZNER.

Gilmore, Fla.

"AFTER THE WAR, WHAT?"

I do not know who wrote the editorial, under the above caption, in the June issue of this journal, and I don't care, but, in my opinion, the author was digging around the roots of truth.

War (as all wars) is the outgrowth of autocracy, and autocracy most assuredly now is on its deathbed.

"How can you be ruled without a ruler?" It has just come to the mind of man that he doesn't need a ruler or to be ruled; furthermore, it is in his own power to rule himself or to accept the rules of society given by popular voice.

I never voted a socialist ticket in my life, and am a dyed-in-the-wool southern Democrat, but, I can see this: Remove the fanaticism from Socialism, and it will be the government to be accepted by society after the war.

When we get through, this world will look like a beautiful girl dressed in sackcloth and besmeared with ashes. What then will she do?

Well! Take off everything; bathe; and then start to arrange her dress. Will she be likely to put on the same old clothes that got her into the present plight? No! She will dress according to the rules of the dawn of the New-Order-of-Things, now here; to wit, popular government.

That is not all (this will make some frown). Religion will go down during the next era of one thousand years. Why? Because it is based on the idea of one man-rule. No one living now will see the Christian religion extinct, but, time will last till it is known only as history. What? Then the world will be back to where it started! No. Mankind will have something a thousand times better. Truth! The Bible was written wholly on the idea of kings, kingdoms, and rulers, and patterned after that idea, but, now the world is coming to the time when every person will be his own king and his own ruler. The other night we had a church-meeting and a picture-show here; one free, the other charging a small fee. The small-fee people got the bigger bunch, by odds 10 to 1. The "1" bunch could have prayed from their hearts that God would send fire and brimstone down from heaven and burn up the other enterprise. In their hearts, the "9" bunch were not thinking about the other bunch; if they had, they would have wished them well.

We have already made the change in the minds of the people, and this war is just simply putting it to work. This is the birthday of a new world. Frown all of you, if you please, call me a fool and all that, but, facts can not be changed.

T. H. STANDLEE.

Lyra, Tex.

POSTGRADUATE WORK IN ASIA

Although I have taken postgraduate work in Europe three different times, I was somewhat surprised when nearing the chloroform-age to discover that I was doing some very valuable study along postgraduate lines in Asia. In Palestine I had the run of a large leper-hospital. Leprosy had not been among the diseases treated by me. While I was in India, there were reported in that country from five to six thousand cases of bubonic plague a week. In fact, in the city of Bangalore, when I visited it in January, 1914, all these diseases were epidemic; and there was hydrophobia there, also, a number of soldiers having been bitten by a pet monkey.

At Tokyo, Japan, there was an epidemic of typhus fever—"fleck-typhus" [German for spotted typhus.—ED.] they call it there. Three thousand cases were admitted to the hospital for infectious diseases at Tokyo during the months of March, April, and May, 1914. Having been a student at Berlin with the well-known bacteriologist Kitasato, of Tokyo, and having met him at the Congress for the Arts and Sciences at Saint Louis during the Exposition there, I called upon him. He said he remembered me (which I doubt) and treated me very kindly; and he kindly gave me cards that vouchsafed me an entrée to medical Japan.

I proceeded to the hospital for infectious diseases in Tokyo and was shown through it and saw a large number of cases of typhus in all stages. There were but few patients in the very early stages, as the epidemic is fast disappearing. None of these cities seemed alarmed about the epidemics within their boundaries, nor did the outside world take

any special precautions against them. This was perhaps due to the Taisho Exposition in Tokyo and to the Dowager Empress's funeral which was just about to occur. Besides this, I met a number of young medical men who in hospitals and in private practice were doing more work and more good in Asia, seeing more and learning more, than they would do in a long time at home.

The young ship-surgeon on the steamer on which I crossed the Pacific had eighty cases of hookworm disease on board. They were Chinese, steerage-passengers, and would not be allowed to land unless cured on the way. The Pacific Mail paid him, in addition to his salary, five dollars for each case of hookworm disease which he cured. It is said that the Chinese make a practice of getting on a Pacific Mail steamer bound for America, to get cured of hookworm disease free. This young ship-surgeon, just two years out of college, would have to wait a long time before he would have eighty cases of that disease on hand at once in private practice.

I would recommend Asia as a postgraduate school!

E. S. McKee.

Cincinnati, O.

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[This is the last article that we have on hand, contributed by Doctor McKee, whose death we announced in the December issue, page 1024.—Ed.]

TREATMENT OF TUBERCULOSIS

That there should be a wide divergence of opinion as to the use of the many therapeutic and surgical procedures advocated for the treatment of pulmonary tuberculosis, is a foregone conclusion; nevertheless, there is almost unanimity of opinion as to fundamental and adjuvant treatment, especially with respect to fresh air, proper feeding, sunshine, and, to a certain extent, climate and altitude. These are fundamental and are to be carried out in conjunction with the various therapeutic measures considered helpful. Also, practically all agree that, in addition, deep breathing is essential; still, only very few emphasize it, and still fewer have any practical suggestion to offer as to how to carry out this useful aid to a cure, for the reason that deep breathing by the voluntary effort of the tuberculous sufferer is impossible; the exhaustion following the necessary exertion more than overcoming all possible salutary effect. And even if this is not the case —even if the patient has sufficient strength to breathe deeply—he will not, as a rule, voluntarily persist in the exercise long enough at a time, nor for a sufficiently protracted period, to obtain results.

The results of deep breathing in tuberculous cases are twofold, namely, mechanical and physiological. Mechanically, all available lung-cells are opened by deep inhalations; gradually occluded cells are relieved of obstructions and cavities are dried. Physiologically, the supply of oxygen is increased, by virtue of the augmented amount of air inhaled, with a consequent improvement in the blood; an increased supply of red corpuscles; an increase in hemoglobin; and, as a result, the blood is enabled to throw off the toxins constantly being deposited in it from the disease-process.

Tuberculous patients breathe with a progressive increase in the frequency of respiration in direct ratio to the progress of the disease. Gradually they put to use less and less of even the available lung-cells. They inhale as little air at a respiration as possible—principally because they are trying, in every way, to conserve their strength; and this is one of the ways. Therefore, instead of supplying the blood with the increased oxygen that it requires, they gradually diminish the supply, taking barely enough to sustain life, but none to fight off the disease.

Thus, by increasing the depth and decreasing the frequency of the respiration, it is possible to obtain more oxygen, utilization of more of the available lung-cells, and this with all the attending benefits.

Dr. Charles Armbruster has developed an apparatus for deep breathing *without effort*, which, for the want of a better name, he calls the respirator. Essentially, this contrivance is an air-tight chamber into which the patient is placed, except the head. A collapsible covering is placed over the legs and arms, and a noncollapsible one over the chest. By means of a blower, the air is partly exhausted from the chamber, the degree being indicated by a barometer. This exhaustion has the effect of reducing the pressure over the chest and increasing it over the extremities. The chest-wall rises, and the air flows in (is inhaled) without effort on the part of the subject. At the same time the pressure over the extremities forces the blood to the center and feeding the lungs with blood and the blood with oxygen, and in this manner supplying every cell in the body with a vitalized blood current.

By valves and cutoffs, a constant vacuum may be had; a vacuum alternating with nor-

mal pressure; or alternate vacuum and compression over the chest. It is also possible to regulate the depth and frequency of the respiration, as well as its rythm, in that way making inspiration longer or shorter than expiration, as may be required in each individual case. All this is done without effort on the part of the patient—he simply accommodating himself to the adjustment of the apparatus—and he breathes more easily and with less effort than in the natural way.

This apparatus has been thoroughly tested, and in no instance have the results disappointed. All patients treated have been positively tuberculous; all have improved; some apparently have been cured—at least no demonstrable symptoms of tuberculosis remain.

The worst case, a man of thirty, tuberculous for three years, who had had sanitarium treatment, climate, fresh air and sunshine, but constantly growing worse, began the treatment five months ago. At that time there was a well-developed cavity in his left lung, surrounded by a large area of consolidation. He was 5 pounds under his normal weight, could not exercise, was weak, showed an afternoon rise in temperature every day, had night sweats, and appetite and digestion were poor. He thought he could do nothing more than wait for the end. Today he has gained 4 pounds in weight; eats well and digests all his food; has no temperature rises nor night sweats; walks two miles without trouble; consolidation is decreased by two-thirds; cavity, drained by posture, virtually has healed; respirations have decreased, from 28, to now 14; expectoration reduced, from 8 ounces, to at present 1-2 ounce daily. His appearance is constantly improving, and he feels that he is getting well.

In another case, incipient, but defined, the patient gained 15 pounds in two months of treatment. No remedies have been given in any of these cases, except small quantities of internal antiseptics, for the purpose of controlling the temperature. But there is no reason why the apparatus may not be used in connection with any treatment; it can do nothing but good, for it raises a normal function, but which acts below normal, to a supernormal action. It cannot have any bad results, if properly employed, and then only when a hemorrhagic tendency is present. But, with proper adjustments, even this is impossible. Can as much be said for the various therapeutic measures now so popular both in sanitarium and private practice?

The possibilities for the development of the principles embodied in this apparatus, which still is in the experimental stage, are considerable. One thing is certain: in case a collapsed lung does not recover when released from pressure, this apparatus will bring it back to full use.

It is rational therapeutics—theoretically scientific—and so far as results have determined, *it does the work.*

The respirator, as developed by Doctor Armbruster and used by me, is not portable. Complete, it weighs over 400 pounds, including the motors, the blower, and all accessories. It is used for an hour and an hour and a half, two and three times per week, as indicated by the condition of the patient. Consequently, at present it is practicable only for those tuberculous patients who are able to go to the office for treatments. With the present equipment, it is possible to reduce the pressure seven-tenths of a pound per square inch. In practice, it has been found that a less difference than this is advisable.

Further, an inprovement on the apparatus is being perfected, which will make it portable, so that it may be used in pneumonia cases where the oxygen-tank now is sent for, either in connection with the oxygen or alone, as may be required by the available amount of lung-tissue. It is also expected that it will be of use in cases of asphyxiation from gas, mine accidents, cessation of respiration in operative cases, drowning, or due to other causes.

The improved apparatus will also be suitable for unconscious persons, as the full respiratory cycle will be mechanically forced, the lungs being filled with air, and then by compression that air forced out, then to be replaced again by a fresh supply. At present, the apparatus is not equipped to force expiration—that being voluntary on the part of the patient.

ALBERT F. SWAN.

Denver, Colo.

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[So far as we have information on the subject, the attempts to cure pulmonary phthisis with the aid of apparatus designed to deepen the breathing go back to Ramadge, who published several communications on the subject, in the thirties of the last century, which were translated into several languages. Appearing originally in London, Ramadge's essay, entitled "Consumption Curable," was reprinted, in New York, in 1839. That author was of the opinion (also maintained by Felix Niemeier) that phthisis is primary to tubercle formation and that, in the language of the great German clini-

cian, "the greatest danger for a consumptive was, to become tuberculous." This interesting paradox is resuscitated occasionally for the sake of theorizing.

In the seventies and eighties of the last century, pneumatic cabinets were constructed, somewhat along the lines described by Doctor Swan, in which the patients were made to breathe compressed or rarified or medicated air. Only a few years ago, Kuhn, of Berlin, went back to the apparatus proposed by Ramadge and constructed a "suction-mask," which is worn, daily, for varying periods, and in which the inspirations must be forced, in order to procure a degree of hyperemia, according to Bier, and in this manner to promote the healing of the tuberculous lesions.

It must not be lost sight of that breathing-exercises, like all other therapeutic methods intended for the treatment of tuberculosis, can never be successful alone, and that they must always be employed in conjunction with all other measures, notably attention to diet and hygiene, which aid in raising the general tone of the system.—ED.]

DR. SCHROER TAKES ISSUE WITH US

The first essential of the scientific method is, to bring interpretations into harmony with observed facts. From the tenor of the criticism of my article on symptomatic therapy, published in the February number (p. 106), the writer of that editorial (p. 89) has failed to do this. You say that "it would be food for speculation to discuss the difference between stimulating the heart and supporting it." Quite so. A stimulant is a whip; a supporting agent, on the other hand, supplies the heart with potential or kinetic energy. What particular drugs possess the latter property?

The crux of the proposition is, to determine whether or not the abrogation of lung-tissue and consequent defective oxidation, coupled with circulating toxins, stimulate the heart to the limit of possible activity. If it does, then stimulants are dangerous; if not, they are of value. A practitioner of experience gives veratrum viride, not only in sthenic, but also in adynamic types of pneumonia, on the theory that the depressant effect upon the circulation lifts a burden from the heart. Despite the fact that this drug is classified as a cardiac depressant, the results obtained with it are favorable. The question, as all other questions in medicine, is debatable. The test of a truth is, the inability to conceive its negative. You can readily conceive the negative to the writer's position, and conversely.

The writer further challenges the accuracy of your statement that "it is possible for a bacillus to be present in the tissues without causing disease and, indeed, this is a constantly prevailing condition." Physicians are familiar with "Typhoid Mary" (exceptional case), who was a carrier of typhoid-bacilli. Your proposition stultifies prophylaxis and makes all rules of sanitation and hygiene as tinkling cymbals and sounding brass. If a healthy individual carries as many tubercle-bacilli as does an infected individual, then he is as dangerous as a tuberculous individual. If personal resistance is the deciding factor, then quarantine is a farce and sanitation wasted effort.

The writer denies, then, that bacteria (pathogenic) are constantly present in the healthy individual. In the face of your statement, it is ridiculous to accept the presence of tubercle-bacilli in the sputum as pathognomonic of the disease. A local physician once characterized alcohol as a physiological anodyne. The most charitable conclusion to be drawn from that statement is that this physician did not know that an anodyne is not physiological in action. The most charitable interpretation to be placed on your statement is, that you have said something you did not intend to say. It is true, of course, bacteria are occasionally present in healthy persons.

As to the streptococcus and the therapeutic procedure so extensively advertised in the columns of the daily press, the writer is very willing to debate the dements of laparotomy as a cure for the disease it (the epileptococcus) is supposed to induce. It is certain that your journal is not the official organ of a medicopolitical machine the members of which, united like a Macedonian phalanx, defend the wrong or by silence give consent.

Finally, you challenge the statement "that the body can never rise above the standard of equilibrium peculiar to itself." Neither can anything else. If it arises above its equilibrium, by all rules of logic and bionomics, it must lose its equilibrium. If you artificially force it to rise above its equilibrium, you necessarily destroy it.

Therapy is based upon the inability to transpose sufficiently to involve foreign groups in a destructive affinity. Immunization is one thing, destructive affinity quite another. The one is a prior saturation of

affinity, the other is an entire reversal of affinity.

Reversal of affinity means, summary inhibition of a disease-process without the interposition of symptomatic therapy. Specify one disease-process that expresses this condition. If the body could, with or without aid, rise above its equilibric peculiarities, a disease-process would stop without further medication. An eminent physician describes quinine and urea hydrochloride as antitoxic in pneumonia and then gives a supplementary list of drugs to meet symptoms. Verily, the antitoxic power must be feeble to require so much assistance.

Heeding your admonition, to make comment short, the writer cannot discuss the side-chain theory. It has been criticized, on the ground that it makes entities out of processes. Therapy, you say, is being clarified, supported, and firmly established in the laboratory. In support of which, you publish about fifteen remedies for pneumonia and ask for more, probably twenty-five for headache, and have not exhausted the list, and possibly fifty remedies for exophthalmic goiter—which requires no comment.

There may be wisdom in a multitude of counselors and efficacy in a shotgun-therapy, but, the essential kernel of therapeutic fact is preferable to the heterogeneous conglomeration of conjectural excogitation in which this fact is buried.

Your journal received. It is very pleasing. Find payment for subscription enclosed.

H. SCHROER.

Cincinnati, Ohio.

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[If we had the time to spare—and the space, it would be interesting to take up Doctor Schroer's objections one by one and discuss them in detail. But it is not the policy of CLINICAL MEDICINE to engage in academic or in fruitless discussions. The writer of the editorial to which Doctor Schroer objects desires to comment briefly on two points raised by our correspondent.

To begin with, Doctor Schroer challenges the accuracy of the statement that "it is possible for a bacillus to be present in the tissues without causing disease and, indeed, this is a constantly prevailing condition." The proof of this statement is found, for instance, in the enormous number of autopsies reported, according to which tubercle-bacilli were found in lymph-glands and other tissues children and adults without having caused more than very slight tuberculous foci; certainly without having caused tuberculous disease. To mention only one instance: Julius Bartel, of Vienna, described some of these findings in a communication to the Washington Tuberculosis Congress held in 1908.

While in the early days of bacteriology the strictly contagionistic school assumed that the invasion of pathogenic bacteria unavoidably must lead to disease, it was shown early, first of all by the late Prof. Isaac Straus, of Paris—if memory serves—that virtually all nurses, medical students, and internes employed in the tuberculosis wards of Paris hospitals carried tubercle-bacilli in their nasal and pharyngeal tissues without showing signs of disease, and it was largely on the basis of Straus' findings that the necessity of susceptibility—want of resistance, predisposition, whatever you will call it—was reestablished, in addition to infection, for the occurrence of infectious disease, and that its importance was recognized again.

Doctor Schroer objects to the many remedies that are mentioned for pneumonia, for headache, for exophthalmic goiter, and so on, and sees in the multiplicity of proposed remedial agents a support for his position. One might as well say that, since hunger actually is appeased, not alone by bread, but by meat and potatoes and rice and a large diversity of other foodstuffs, the sensation of hunger is not removed scientifically. We much fear that Doctor Schroer has been led into a *reductio ad absurdum*.—ED.]

INFANTILE PARALYSIS

We may not have an epidemic of poliomyelitis this year, but, when hot weather sets in, there may be more or less of it, so that a few remarks on this subject may serve to prevent much of the disease and its dire sequels.

I had the pleasure of being in New York City for a little over two months during the 1916 epidemic, hence, had ample opportunity for making observation. I shall not go into lengthy details, but will simply relate a few facts gleaned from daily reports and personal observations.

As one observes the daily public reports, one naturally might conclude that it is purely a thermal disease; for, the number of cases reported increased and decreased as the temperature was higher or lower. When we had a few days or a week of very hot weather, the number of cases increased proportionately; while a few days or a week of colder weather would diminish the number of cases; and

after several weeks of cool weather the disease almost disappeared.

Many of the cases reported were not infantile paralysis, or, rather, did not develop as such; unquestionably because the attacks were milder or the victims had received early treatment, and, so, the disease would subside and not produce paralysis.

Undoubtedly many cases were aggravated because of not receiving early treatment, and others because they were sent to the hospital instead of receiving prompt treatment at home; thereby delaying the first, and most important, aid and treatment. What I mean by this last statement may best be understood by my citing a case.

One Sunday afternoon, I, with one of my cousins, went to a suburb about 20 miles out of the city, to visit another cousin, and each took a small package of things for the folks. (This may account for not being noticed by the guards.)

When within one block of the residence, we got off the car and walked to the house; it being dusk. When we arrived at the porch, several people there greeted us with "How did you get here?" We were somewhat astonished when told that the block was under quarantine, that no one was supposed to enter or leave there without a permit.

That morning, an infant of about seven months had had a spasm and the family physician had pronounced it infantile paralysis. He sent for the health-officer and ambulance, and the mother and babe were taken to the hospital without ceremony—taken to a place where the child certainly would contract the malady if that could be conveyed to it by contamination from cases of the disease. What medical treatment this infant received before being sent to the hospital I did not learn.

What I mean to say is, that the first thing the family should do when the child shows symptoms of restlessness, fever, diarrhea and so on, is, to withdraw all food, administer a dose of castor-oil, and send for the family physician, who should give the proper treatment there, at the house.

The fever, headache, muscular pain, and so on, the convulsions, and, later, the paralysis usually are due to a toxemia brought on by overeating and intestinal fermentation, and not from any contagion.

Early and proper treatment, as was amply proven in 1916, will prevent paralysis in nearly every case, even in times of epidemics.

The treatment in the main should be preventive. Keep the child out of the sunshine; keep it out of doors, but, in the cool shade as much as possible, in cool, airy room, and with as few clothes on as possible. This in health as well as during time of sickness. Give no cold water—the water should be no colder than the surrounding air, and it should have been boiled. The medicinal treatment for infants should consist of calomel, 1-10 grain every fifteen or twenty minutes, repeated from five to ten times, followed, in one hour, by a laxative saline, to clean out the bowels. After that, enough to regulate the bowels and to keep the blood cool. Then a febrifuge seldom will be needed.

Infants, when feverish, want the breast or bottle, not because they are hungry, but because they are thirsty. Therefore, all food should be withdrawn, the child should receive no milk, but may be fed weak barley-water and plenty of warm boiled water to drink. The laxative saline may be made more palatable by adding sugar or aromatic syrup; but, sugar is best, because that will not increase the bulk and can be administered in small, say, teaspoonful doses.

After the bowels have been emptied, give the laxative saline in small doses, say, one-half to one teaspoonful three times a day or as required to keep the bowels loose and the blood cool. This may be supplemented with some intestinal antiseptic, some of the combined sulphocarbolates, alternated with the laxative saline, such as Abbott's intestinal antiseptics, in doses to suit the age of the child.

Patients treated in this way seldom contract paralysis, and those who already are attacked, if treated along this line, will recover, if recovery is possible.

Electricity and other well-known measures should not, of course, be left out of account.

R. WILLMAN.

St. Joseph, Mo.

THE PROPHYLAXIS AND CURE OF DISEASES

Venereal disease is as old as the human race. We find record of it in the Bible. We know that it was one of the most prevalent diseases among the American Indians. Columbus is supposed to have died from the effects of syphilis contracted from the Indians. Then, as we come down through the centuries, we find it steadily on the increase; and now, during the last decade, it has spread by leaps and bounds.

The only positive preventive of venereal disease is total sexual abstinence. But, as

we all know that that is impossible and only works in theory, we must find some plan to lessen a seemingly necessary evil.

We can not expect the layman to create, without our aid, intelligent laws to control this evil, with its harmful effects.

According to some authorities, venereal diseases are the most prevalent of all diseases, and, if they were made reportable, the same as any other contagious disease, we should find that this is true, or at least that they are near the top of the list.

From the 15th to the 18th century, the three venereal diseases were regarded as one disease, being only different manifestations. Cancer was at one time thought to be a stage of syphilis. Only in 1837 Ricord proved the existence of two distinct diseases, by a series of 667 inoculations, which separated syphilis and gonorrhea as two distinct maladies. Then Bassereau, twenty years later, proved chancroid to be a mild infection not at all associated with either syphilis or gonorrhea, as was supposed.

Gonorrhea is the most prevalent and the most disastrous in its effects upon the human body, not alone in the man, but even more so in the woman. This fact gynecologists can attest to. Syphilis, although it affects every organ in the body, takes longer to manifest its ravages, and many have syphilis without ever suffering any ill effects, while many die of some other disease before it has had time to show itself in the form of the nervous and paralytic stages. In gonorrhea the opposite is true, for here the subject generally lives long enough to see the full harm done.

It is time for society to realize the great prevalence of these diseases; for, from 75 to 80 percent of men have had one or more of these diseases before marriage. The time has arrived when it is both a professional as well as a national duty to face the facts as they are and to find some plan to alter these conditions, instead of sitting idly by and letting them take their course.

Why do we have this increase, who is to blame, and what is the remedy? The breeding-place for venereal disease is not so much in the house of ill fame as would be supposed; it is due to illicit promiscuous intercourse. The prevention lies in lessening the promiscuity, when venereal disease will decrease in proportion.

The greatest disseminator of venereal disease is the streetwalker, she who solicits and plies her trade on the streets; also the waitress, the factory girl, the clerk; in other words, the girl that works for a low wage and necessarily so, as she is mostly of the ignorant class or too lazy, and thus unable to command a higher wage. These women do not know the meaning of antisepsis, while the regular prostitute in the house knows her business and has learned the elementary principles of antisepsis, and uses them, as her work and living depend upon keeping clean.

Why do working girls share in this nefarious trade?

Finery—that answers the question. They work for low wages, but want to dress in the height of fashion. They have too much pride to be classed as common prostitutes, and, so, the money must come from somewhere for them to be in style with their more fortunate sisters that do not have to work.

But drink is the main root of the venereal evil, and what a gigantic blow we could strike if we could cut out that root. No, the tree would not die, but you can rest assured that it would not flourish with the same vigor it does today. Cut out the booze, and you will destroy the agent that paralyzes the moral sense of the young men and women; and then the promiscuous intercourse will of itself be reduced to a considerable extent. But, of course, prostitution and promiscuous intercourse are as old as the world, and will be with us when the curtain falls on the last scene of the last act in the theater of the world.

Alcohol and desire for fine clothes, in connection with low wages and environment, cause at least 90 percent of promiscuous intercourse.

A normal man between the age of 18 and 35 years, if not married, can not possibly conquer his sexual urge, and he will either resort to masturbation or to illicit intercourse. You ask, Why not get married? With the ever increasing high cost of living plus the fineries demanded by the woman of today, this is an impossibility for many men.

The timeworn plan of segregation has been a "successful" failure, and all the lecturing and preaching will not be of any avail unless it is reinforced by laws that will be carried out, and by the cooperation of the medical profession.

Germany has made great strides in solving this problem, by making all venereal diseases reportable. The patient then is placed in quarantine until cured or at least until he or she is past the stage of infectivity. They receive the proper treatment, while every prostitute is licensed and examined at regular intervals.

If we were to do this and make the women report before some reputable physician, to

have vaginal smears taken and examined microscopically, this to be done once a month, and if, when found positive, the proper treatment were applied, we should reduce the trouble to a minimum in the prostitutes. As for venereal diseases in other patients, these should be reported to the state board of health, and at the conclusion of each case the physician should be compelled to report to the board that the smears were negative and that in his opinion the patient is free from infectivity. Or, in the case of syphilis, he should send some blood to the state laboratory; and there should be at least three negative reports (successive) and the subject be free from symptoms for at least two years before telling that person that he or she is cured.

The expense would not be as great as one would think, to carry out this work. Make every patient pay a small sum, say, 25 cents for each visit to the dispensary. This would pay for the material used, except salvarsan, (charging for the latter according to the price ruling at the time). An appropriation from the State added to the funds of the state board of health, for the additional work placed upon this body, how could money be spent with more benefit? Not only this generation, but the third and fourth generations would benefit by such a plan. The money paid out in this way would not have to be spent in providing homes for the blind, the idiot, the paretic, the paralytic. Of course, I do not mean that we would not have these unfortunates with us, but the decrease would be in proportion to the progress made in the prevention of the diseases that are the causes of these conditions.

None but legally registered physicians should be in charge of this work, and they should be appointed by the governor, one man to a county; and this man could be supplied with assistants enough to carry out this work. The man could only be appointed through a recommendation by the president of the county medical society; or it might be better, perhaps, if the man were nominated and elected the same as any other officer of the county society, who could be removed from his position on proven charges of improper conduct or incompetence.

By all means, all venereal diseases should be made reportable the same as any other contagious disease. We are compelled to do this with diseases that are not nearly as far-reaching in their effects as the venereal diseases. That much dreaded disease, smallpox, in which the quarantine is ironclad, can not do one-tenth the harm as a case of syphilis or even one of gonorrhea can do.

I believe in segregating the prostitute. Give her a license, make her report for examination at stated intervals, treat her, if positive. Boys under the age of 21 should not be allowed in this district after 6 o'clock. They are not allowed in saloons at any time.

I am not trying to commercialize prostitution. It is a vice for which there is some excuse, and we all know that it is an impossibility to do away with it altogether. So, we must devise some plan by which we can lessen the effects of a seemingly necessary evil. We legalize the saloon, for which there is no excuse whatever.

Another great factor in lessening and preventing these diseases is, by properly treating them; and this would be done under the above plan. But even as it is today, the doctor is often to blame for the spreading of a venereal disease. The main thought is, to bleed the patient and treat him with contempt. Doctor, if any patient ever needed your confidence and advice, it is the venereal patient.

Every venereal patient should have the dangers explained to him, and should be taught how to protect himself and how to protect others. You owe this to your patient and to society. Make it emphatic, impressive, comprehensive.

Never forget to instill a drop of 2-percent silver-nitrate solution in the eyes of the new born. You may do this one hundred times unnecessarily, but what a blessing that you did in the one hundred and first babe, when it had the gonococcus in its eyes. You can feel that you have saved at least one mortal from going through life blind, and you will be well repaid for the work that was done. Examine your genitourinary cases thoroughly, determine the extent of the invasion, and do not forget to examine the prostate gland in the chronic cases.

These gonococci and spirochetes invade men and women without distinction—high and low, moral and immoral alike—unless a person is defended by cleanliness and antisepsis. Hence, every man should be taught the value of protargol and calomel-ointment used immediately after exposure. The protargol-solution is placed in the urethra and held there for five minutes, while the shaft of the penis and the glans are to be anointed with the calomel-ointment. This is very effective and almost a sure preventive.

In acute cases of gonorrhea, irrigations under very low pressure, using either silver nitrate or one of its salts, or else potassium

permanganate, each has its staunch supporters. Use very low pressure. Do not create a posterior urethritis; it develops easily enough without your aiding it. In connection, give santalwood oil and a bromide mixture containing belladonna. In posterior urethritis and cystourethritis, irrigate under pressure, and include the bladder.

In chronic cases, the prostate gland must be massaged, and silver-nitrate instillations be made in the posterior urethra if complicated with stricture. Then sounds must be introduced. Last, but not least, always after massage, collect some of the secretion and examine under the microscope and count number of pus-cells to the field. Do this every time, and it will give you a guide as to the progress of your treatment. Keep this up until you get no more pus-cells. Then, and not until then, is your patient cured.

It is through the chronic cases that the doctor is often to blame for the dissemination of the disease. The chronic case is neglected both by the patient and the doctor. It is most surprising how many patients will tell you that they have been treated for gleet and then, if you ask them what has been done for them, will tell you that they have had about every injection in the Pharmacopeia, without ever having had the prostate gland touched. Now, if this is too much trouble for you to do, you owe it to your patient and to yourself to send him where he can have it done. The gonococci lie in the trenches and are enjoying life while you are bombarding their abodes. Massage the prostate gland, and drive them out into the open. Then you can make your defense count. Doctor, you must cure your chronic cases if you ever hope to see a decrease in the acute cases.

In chancroid, the sore must be kept clean and some antiseptic dressing be applied, preferably one containing some mercurial—of which black wash is as good as any. This generally is all that is required in this infection.

In syphilis, the treatment is so well known that it hardly needs any mention here. I believe the old, original salvarsan to be more effective than the new form. At least three doses should be given, about ten days apart, and then mercury for at least three, or, better, six months. Then stop all treatment for two months. Then get a Wassermann test. The reason for waiting is, that mercury will cause a negative Wassermann reaction, when otherwise it might be positive. You should have at least three successive negative Wassermann tests made, three months apart, and the patient should be without any symptoms for at least two years following before you can assure him that he is cured.

H. D. Leh.

Lancaster, Pa.

CHILDBIRTH-AGONIES THEN AND NOW

What I am about to relate occurred over half a century ago, in the beautifully wooded hill country of eastern Ohio.

In those times, the country was scantily populated, as I need not remind the reader, while the roads and ways through the woods were little more than bridle-paths. It was in one of those pioneer-built houses, in a lonely, deserted region on a byroad, that in the night in question a young married woman awoke from her slumber and cried out: "Oh, Billy, dear, you must go for the doctor at once, I am in such terrible pain; and, O look! the bed is red with blood." Hardly awake and almost frightened out of his senses, the husband dressed hastily, and in company with the hired man hurriedly proceeded to the stable to saddle up the two best horses. In their unconsidered haste, one of the horses got loose and ran wildly about the barn-yard, trampling down a large patch of rank-growing "jimson-weed." The night was damp and foggy, one of those muggy, sticky, oppressive nights, when not a breath of air is stirring. The stramonium was in full flower, and being thus rudely crushed it filled the air with a most disagreeable odor. When at last the two men swung into their saddles, Mr. Brown—as we may call him—said to his helper: "You go for her father and mother. It is six miles. Do not spare horseflesh—ride hard. They must come at once. I am going for the doctor, who lives seven miles from here." A tightening of reins, a prick of the spur, and two stout, young men went out into the murky night—one riding for life, and one for life and love.

Down the vales, up the hills, along the ridges, their faces brushed by the trailing branches of beech-trees, their horses' hoofs crushing the acorns that had fallen from lofty oaks or striking sparks as the iron-shod feet struck hard on rocky ways. Topping the last rise of ground, the heart-sore husband exclaimed, "Thank God! he is at home!" As he rode up to the house, the doctor stepped out of the door and spoke up: "I heard you coming, Mr. Brown, and I knew just what your wild ride imports. I had not yet gone

to bed—just got in half an hour ago, but must go to see a patient, five miles from here, just as soon as it is light enough to travel. The road there is a new and bad one, and I have never been over it. As it is, I am going with you at once." Then, with saddlebag slung over his arm, he led the way to his stable and, saddling a fresh mount, soon was ready for the start. The horse selected for the trip was a big, raw-boned, rut-tailed, broad-breasted, rangey dark bay, wide between the ears, and capable of anything that a country doctor's horse may be called upon to do. Dropping into a long canter, the animal took the lead at a good stride, which it was capable of holding for miles. Mr. Brown was mounted on a white mare of great strength and fleetness, who, although having covered seven miles in an incredibly short time, was ready and anxious for the race home. Her shorter steps, but quicker stride enabled her to keep up with the majestic gait of the doctor's steed. From the initial canter the two good beasts soon broke into a lope, and thus they climbed the hills and descended the slopes, and proceeded along the valleys, with an even onward rush, with ever increasing pace, rather than slacking up; never showing weariness.

As the two riders reached the hill overlooking the farmer's house, there beat upon their alert hearing, from the opposite direction, the sounds of three horses, madly running. The hired man had safely delivered his urgent message, and without delay two horses were saddled, ready for the journey. The people of those times all were expert horsemen and horsewomen, and the horses of those days were those you could love, and caress, as you would one of your household, so gentle, so intelligent, so fleet were they. The mother's horse—her very own—a full-blooded hunter, the gift of her father from the Winchester Valley in Virginia, was a beautiful bay mare. Coming out, ready for the ride, and after a hasty examination of saddle-girths she was in her seat and fairly flying down the road and out into the enveloping darkness. Who but a mother should lead in such a journey as this, when a beloved daughter was calling to her through the mist?

The father saluted gray Selin, a powerful gelding, whose record as a fullblood was hung up by the fireplace at home and whose blue ribbons from many a hard-won race were there to keep it company. Like an Arab Sheik, with his long white beard, he looked astride that wonderful horse, and as they moved off into the darkness one might have thought of the centaur, half horse and half man, so truly did the twain move, as though they were but one. The messenger, leaving his tired horse, had selected a good runner from the stable and also was pounding down the road, hard upon the heels of the elder pair hastening ahead of him.

Oh, for a picture of them as they rode, those shadowy forms plunging onward into the night, while to each anxious heart the trampling hoofbeats seemed to say, "For life and love, for life and love." And now they are coming up the last valley, passing the tall oak whose great roots reach half across the road. And now they are passing the bushy oak, whose proud top years ago had been cut off by lightning and about one side of which there now was collected an aureole of long green branches whose leaves in summer threw a shade to protect the time-tried trunk. And now we can tell by the hoofbeats that the three are descending a gentle declivity to where the road crosses the brook on a rustic bridge.

But, see, what is this? Yes! Mother has shot ahead and is riding in the lead—as surely a mother would ride in such a race. She approaches the bridge. One spring, and the bay mare has touched the center, and one more, and she is tearing on and up the hill beyond. The mare has lost a shoe from her hind foot. We can tell by the sound made on the bridge. Up she goes and is approaching "Nancy's stool," that crooked tree standing squarely in the middle of the road and a dangerous object to meet in a dark night and riding at breakneck speed. It is a tree a foot and a half in diameter, that had trouble when it was little. Something fell on it, striking its trunk two feet from the ground, and this caused it to grow at right-angles for two feet before it again turned upward, making another right angle. This bent left a chairlike seat, and people called it Nancy's stool, because at one time a girl by the name of Nancy had sat there.

But what of father and gray Selin? While we have been talking he has covered the track mother had gone over and as he reaches the bridge Selin never touches it at all. With one bold bound he vaulted clear and then sped onward in arrow-flight, and, as mother passed the stool of Nancy on the left, he and Selin passed it on the right, and side by side they entered the farmyard gate at the very moment when their daughter's husband and the doctor were coming in from the other

direction. Bounding off, the mounts were left for the hired man to care for, and the four rushed into the house. Strange to say, as they passed up the front steps the doctor and the father exclaimed simultaneously: "But, how very disagreeable that jimson-weed is smelling!"

The door is thrown open and then there their eyes fall upon a wan, pallid face, while a telltale pool of blood is seen on the floor. Mother and the doctor are at work at once. Father and husband can but watch and wait. Anxious moments followed, but the labor of love went on. Then, at last, a fluttering of the eyelids, a moan, a recognition, a faint loving smile—then the doctor mercifully holds up the sheet's cover and he alone beholds the final struggle as the gentle spirit takes its flight. Covering up the face, he walks to the window and opens it, but at once closes it again, muttering, "Oh, that disagreeable jimson-weed!"

The sobs of the bereaved break the stillness, and one of the pictures of life's tragedies is woven into the tapestry of human experience.

You can picture to yourself the rest. In less than six months, the broken-hearted young farmer, thus cruelly bereft, also was laid to rest in the family burying-ground (a spot even now cherished as a sacred memento of those days of long ago), buried beside the wife and unborn babe. And there now you also can remove the moss from the monuments set to the father and the mother who rode so grandly, so anxiously through that murky night of long years agone.

And now the scene changes: the geographical location is the same, but not so the actors in the drama. Three generations have been and gone, and what was only country and woodland now is village and city and hamlet, all threaded together with splendid highways festooned with brilliant electric lights.

A young married woman awakens from sleep in great pain and she calls out: "Oh, George! George! Go, call the doctor, I am in such frightful pain; and, see, the bed is red with blood." Half asleep and nearly frightened out of his wits, the husband steps to the telephone and calls up a number. "Hello! hello! is the doctor in? No? You say, the doctor is out, forty miles out the pike? Well, get him on the wire, quick. Tell him who it is, and that Amy is just wild with pain and bleeding to death. Now be sure and rush this!"

The doctor, at Orchardville, forty miles away, gets the message. He calls his chauffeur, orders the big car brought up, and in a few minutes away they go, parabolic headlights blazing and wheels "eating up" the miles. How recklessly he seems to drive! The huge car reels and swings from side to side. That was a near shave, by jove! nearly a fatal collision as the hind wheel just scrapes past a big boulder. For ten minutes they are hurtling through space, when, suddenly, there is a loud report—a tire has blown out. Nothing to do but to stop and put on that extra wheel carried along. On the machine chuggs and snorts again. Then "Doctor," comes from the chauffeur, "the petrol is running low." "Keep agoing," the doctor says crisply, "we must, we *must* push on as rapidly as possible, my boy—a woman's life is in the balance—somebody's darling is bleeding to death!" And away they go, racing against the spectre with the scythe.

By great good luck, they reach the house in time. The sick woman's husband receives them at the door. Without waiting to remove his wraps, without stopping to ask questions, the man-of-medicine takes out his hypodermic syringe, dissolves a tablet, fills the instrument, and pushes the hollow needle under the delicate skin of the bleeding woman. Only now he casts off his wraps, washes and steiilizes his hands, then proceeds to make a digital vaginal examination; and by the time this is completed the hemorrhage has stopped and the doctor knows he has won the fight.

The lips of the women on the bed have lost their pallor, her finger-tips and the hue of the nails have become pinkish, her breathing now is easier. What was it that wrought this magic transformation? A tiny bit of an alkaloid; the fiftieth part of a grain of hyoscyamine. This principle of the henbane-plant dilated the capillaries, and, so, the woman stored away in her own peripheral blood-vessels the life-fluid that else surely would have flowed away. Then coagulation took place at the bleeding points.

Voilà! The life of the expectant mother was saved. The unborn babe was retained in the sheltering womb and safely held till nature was ready for the termination of the pregnancy.

And now, do you ask for the application? You wish the keynote to the song I have been singing to you?

The eclectic practitioners have, for years, taught us that our native herbs contain all the medicaments required to meet "all the ills that flesh is heir to." Later, the alkaloidists came with their winning story of the wonderful *puissance* of drug-plant derivatives

—the resinoids, glucosides, and alkaloids; the true active principles of plants, isolated and prepared for instant use. These, we have learned, do, in skilful hands, produce most marvelous results, little short of the miraculous.

In the poem entitled "The Battle of Ivry" there occur these lines,

> Now glory to the Lord of Hosts
> From whom all glories are,
> And glory to our sovereign liege,
> King Henry of Navarre.

Paraphrasing, let us sing: Glory to the eclectics for what they have taught us, and glory, glory to the alkaloidists, who have given us in such compact and elegant form the sure, the safe, the certain agencies with which we can defend the citadel of human life safely against all diseases that assail it.

Hyoscyamine, the precious, is found (besides in other plants) in the leaves of the despised jimson-weed. Did not nature cry aloud from the ground, "Do not shed innocent blood," when in that fateful night—the night when the hoofs of the unleashed horse tore up the weeds in the enclosure—the downtrodden plants lifted their bruised limbs and shed tears the very odor of which almost screamed out to heaven and to the despairing husband and to the doctor, and seemed to say: "Here are we, a gift of kindly nature. Try us! O, try us!"

But, the rank, fetid odor of the Jamestown weed offended the sensitive nostrils of the good old honest doctor, who knew no better, and its noisome stench but called forth expressions of disgust in the others.

Listen! I hold in my hand a small phial of hyoscyamine, the same of which the doctor in the second case related made use.

Who of us knows but that, as he goes from his patients sick unto death with tuberculosis or with cancer, each day the doctor tramples under foot just such a tender plant, a plant that is calling to him in a language he as yet has failed to interpret: "Here am I, try me! try me!" Now, then, what is the application? "To your tents, oh Israel"—that is the application.

C. S. COPE.

Detroit, Mich.

INSOMNIA

By Boardman Reed, M. D., Alhambra, California

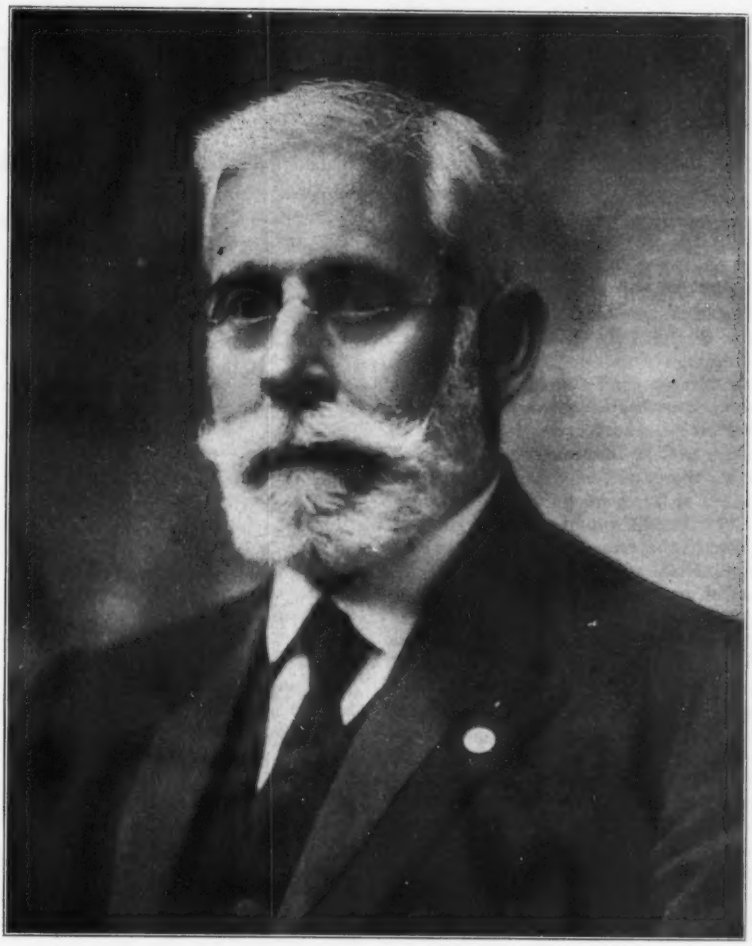
> Refreshing sleep, tired nature's need,
> Spontaneous comes to those who heed
> Her limits and unchanging laws.
>
> Most ails require the doctor's skill,
> But some respond to strength of will;
> Thus, wakefulness from psychic cause.
>
> With eyelids closed and quiet mind,
> All cares and worries left behind,
> You journey to the land of Nod.
> Disturbing thoughts, whate'er their worth,
> You banish at their very birth
> And woo the jealous drowsy god.
>
> Woolgathering stop by stern command,
> Ignore the schemes and projects grand
> With which the brain so often teems.
> Resolve to lose yourself in sleep
> And with this thought your senses steep
> Till waking fancies change to dreams.
>
> Con o'er and o'er some soothing lay
> When slumber still remains away;
> Then naught but pain success should hinder.
> To such a mental concentration
> And soporific iteration,
> Old Morpheus wearied must surrender.

THE ERADICATION OF YELLOW-FEVER

The Cuban government and the Rockefeller Foundation of the United States, through the International Health Commission, are cooperating in a great movement to rid other less fortunate countries of the scourge of yellow-fever. Last June, President Menocal granted a leave of absence to Dr. Juan Guiteras, director of sanitation of Cuba, and famed internationally as an authority on the prevention of yellow-fever, so that he may inaugurate a vigorous campaign to stamp out the disease in other countries, under the auspices of the commission.

In connection with the leave of absence granted to the noted Cuban sanitarian, Dr. William C. Gorgas, president of the commission, likewise has written to Doctor Guiteras, giving to him full authority to investigate yellow-fever conditions wherever they may be found in other countries and to make any suggestions that he may see fit toward the extermination of the disease. As most of the members of the International Health Commission are officers of the United States Army Medical Corps, the Cuban government considers it a signal honor that Doctor Guiteras, a Cuban, should have been appointed to perform such an important task.

Director Taylor, of Las Animas hospital, in Havana, is cooperating with Doctor Guiteras in this work. For the present, it is purposed to begin the scientific researches on the island of Martinique and in Maracaibo. The Rockefeller Foundation has consigned to Doctor Guiteras, through Director Taylor,



DR. JUAN GUITERAS

all the scientific apparatus, instruments, serums, toxins, and so on, necessary for the investigation. Doctor Guiteras departed from Havana early in July for Maracaibo by way of Porto Rico. He will be absent on his researches five months. A corps of sanitarians, physicians and civil employees will accompany the distinguished Cuban savant.

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[The foregoing interesting communication was transmitted to CLINICAL MEDICINE through the "Republic of Cuba News Bureau," of New York, with permission for publication. To the same source, we are indebted for the likeness of Doctor Guiteras, which appears on this page. Doctor Guiteras' efforts for the prevention and eradication of yellow-fever are a matter of history, and it is in just recognition of his meritorious services that he was entrusted with the task of finding means and methods to stamp out this scourge of tropical and semitropical countries.—ED.]

In the World War

GENERAL PETAIN

Being in the midst of the activities of the war, in an atmosphere that breathes and pulses with the daily movements, changes, gains, and losses of our armies, where the political atmosphere is weighed, discussed, and watched with critical care, to determine its good or evil effect upon the progress of our military effort, it is hard to deny oneself the desire that seeks expression when some great event of farreaching importance occurs, especially when it promises great good to the cause, to the success of which we are all bending our efforts.

Those of us, who are familiarw ith the history of our Civil War and have had the privilege of personal acquaintance with some of the great political and military figures of that time, are well aware of the secret intrigues, jealousies, and personal struggle for place and power that at times hindered the success of our military movements and clouded many a worthy name, while lifting an unworthy one into undue prominence. These conditions seem destined to form part of every great national movement since the siege of Troy and today constitute the greatest danger to the issue of successful democracy out of the Russian revolutionary movement. But, there has just taken place in France a change that is hailed as the greatest promise of good of any one change since the beginning of the war; namely, the appointment of General Pétain to the chief command of the French army.

Like Joffre, Pétain possesses the confidence and affection of the "poilu," the common soldier.*

When acute danger threatened the French army defending Verdun and in some quarters the opinion prevailed that we must retire and evacuate that stronghold, Joffre sent Pétain to take chief command and hold that fort against all comers. One snowy night in February, 1916, Pétain arrived at headquarters and without waiting to remove a single snow-soaked garment took up the telephone and began calling the corps commanders one after the other, and informed them that he was in command and would visit their stations on the morrow.

The first one he called up expressed the sentiments in the hearts of all: "Are you here in command, general? Then everything will be all right." That is how the whole French army feels, now that General Pétain has been given the chief command. He is, in the best sense, a soldiers' general. The men know all about him and they admire him for what he has done and what he is.

No more brilliant career at the front than General Pétain's has been recorded and by his rapid rise to prominence he is known as one of the revelations of the war, at the beginning of which he held the rank of colonel, temporarily in command of the 4th infantry brigade. His fine qualities won immediate recognition; on August 30, 1914, he was appointed brigadier-general, and in April, 1915, general of division. Two months later, he was given the command of an army and, in April, 1916, became the commander of the group of the armies of the center.

They tell many stories of his coolness and courage. One illustration must suffice. At the battle of the Marne, there was some little hesitation about assaulting a hill protected by a barrage of heavy gun-fire. Pétain rode out in front of the troops, dismounted, gave his horse into the charge of his orderly, and, turning toward his men, drawing his sabre, and crying, "Follow me!" wheeled and marched at a pace as if on parade. With a battlecry that tore every throat up and down the line, the troops wheeled past him, forcing him to the rear, while they stormed and carried the position.

Further, the troops are aware of General Pétain's sympathy with them, his consideration for them. They tell how he slows up his motor-car when he has to pass a column on the march; they tell how in the Champagne, when he ordered a specially heavy advance

* It may interest numerous readers to know that "poilu" means "bearded," or, literally, "hairy"—from "poil," hair, hence, also, "beard."

at the "double," he himself ran afoot three miles with the men. Exercise is almost a mania with him.

In figure, Pétain is tall and wiry, his blue eyes and fair hair make him look like an American or Englishman, he is young-looking for his age, and he is a great leader of men, a hard hitter, cool and clear-minded, and possessed of great force of character. He has the gift of clear explanation, which made him popular among the young officers while he was a professor at the military school. But, his freedom from pedantry did not commend him to the mediocre men who were his superiors. He denounced their methods; so they kept him down as long as they could. They nearly kept him down altogether. When war broke out, he was on the point of retiring as a colonel. Mediocrity had almost triumphed over genius. But, now genius had its chance. All his life, Pétain had been preparing himself for the highest destinies, despite their seeming to be beyond his reach. Now the preparation is bearing its fruit, and at the moment when a great leader is needed to direct and carry out the great offensive so splendidly initiated by the British troops under Haig the star of his destiny rises to its zenith and he becomes the man of the hour.

Pétain knows his business thoroughly from A to Z. Long ago, he foresaw the part that artillery would play in advances. "The guns win positions" he used to tell his pupils; "the infantry occupy and keep them." Yet, he is an infantry-man himself. There, in a sentence, is the science of modern war.

Only two weeks ago, he was appointed chief of the general staff at the ministry of war, but, apparently it required but brief personal contact with his associates to persuade them that that was not his place. He is succeeded at the war office by General Foch, who is the idealized Beau Brummel of the army; by all odds the most brilliant of the many brilliant men brought out during the past two years. Recklessly brave, handsome, dashing, of magnetic personality, he wins everyone with whom he comes in contact.

Pétain is nearly sixty-six years of age. He has taken a brilliant part in many of the most important operations, notably in the battle of the Marne, when he drove the Prussian Guard back into the Saint-Gond marshes. In the battle of the Yser, he again displayed his fine qualities as a chief, and as commander of the group of armies of the north he prepared and carried out the two Artois offensives in 1915 and the battle of the Somme in 1916, where he was dangerously wounded.

B. SHERWOOD-DUNN.

Paris, France.

THE WORK OF THE EXEMPTION BOARDS

In CLINICAL MEDICINE last month I promised to tell, in this issue, something about the work of one of the local boards chosen by the Government to pick the men for the National Army. When I made this promise I expected to be able to give you details of the results of the physical examination in statistical form. This, I regret, I am unable to do. The stress placed upon us has made it impossible to assemble data in such a form as to make it of value for the drawing of conclusions. The best I can do is to give you a sort of bird's-eye view of our experience.

Local Board 59 of the City of Chicago, of which the writer is a member, comprises the section commonly known as Ravenswood and includes thirty-one precincts (about one-third) of the twenty-sixth ward. The other members of the board are the Rev. A. H. W. Anderson, rector of our local Episcopal church, and Mr. Wm. J. Stapleton, an attorney. The combination of the three learned professions would seem an ideal one. Whether it actually is, the members of the board are too modest to say.

In Ravenswood there are no very rich and not many who are very poor; in other words, it is a "middle class" section. It contains people of practically all nationalities, with a very considerable proportion of Germans, Swedes and Austro-Hungarians. While it is impossible to give definite figures, I should say that not to exceed one-third are of pure English descent. There is a scattering of Norwegians, Irish, English, Canadians, and Danes; with, also, a few French, Belgians, Hollanders, Swiss, Russians, Italians, Greeks, Armenians, Turks, Roumanians, and Finns. There were three negroes and three Chinamen on our list.

Our registration list included 3145 men, and our allotment for the first draft was 271. For the first examination we were directed to call 542 men. It soon became apparent that this would be insufficient, and 358 more were called for examination later, making a total of 900. At the present writing it seems probable that we shall have to summon a few more, since the Government has now

ruled that 10 percent additional to our quota should be provided, or a total of 298 men.

The amount of clerical work involved is simply appalling. The first task given us was to take the registration cards from the thirty-one precincts and renumber them all consecutively ("in red ink") from 1 to 3145. Every one of the registration cards and the copy thereof had to be signed by some member of the board after the red number was put on. Then several accurate typewritten lists were made, copies of which were to be sent to the Provost Marshal General of Washington, and the Adjutant General of the State, another copy to be furnished the press, while still others were to be preserved by the board for future reference.

This "sounds" easy. As a matter of fact, it was a tremendous task, impossible of completion in the time allotted us. Fortunately we were able to marshal a large volunteer clerical force to help us; from five to twelve people, in addition to the members of the board, working constantly on this task for nearly a week.

After the drawing of the numbers to determine the order of call was made in Washington, we were directed to make another complete list of our 3145 men, this time in the order of the call instead of the order of the serial numbers. This task was almost equally great. We were able to secure the assistance of several typists from The Abbott Laboratories and a number of young men from the Y. M. C. A.

And all this was only the beginning. We were supplied with blank forms for claims, for affidavits, for reports, and we were nundated with showers of telegraph messages from Springfield and Washington telling us what to do, and particularly what not to do.

The greatest interest to the physician naturally centers around the physical examination of candidates. These examinations were made by the writer, assisted by four physicians selected by the Government upon the nomination of the board. We were likewise directed to have every man who was found physically unfit by this examining board reexamined by another physician entirely independently from the first examination. If on reexamination he was found fit, the board was directed to accept the man for the Army. It was empowered to overrule both the examining physician and the reexamining physician, and, in one instance, it exercised this power.

The first batch of candidates was examined at the rate of 180 a day. In order to accomplish this task, the examining and assistant examining physicians organized a "team". One man weighed the candidate and took his height and chest expansion; another made a general inspection and examined the genital and anal regions to locate hernia and genitourinary and rectal diseases; another examined the heart and lungs; still another, the mouth and throat; while the final examination of the eyes and ears was made by still another. By working in this way it was found possible to run through from twenty to twenty-five men an hour without serious inconvenience. After the routine was well established it worked very smoothly and very rapidly.

As our records are as yet not complete, we cannot give accurate data. However, we examined in all between 850 and 860 men. The percentage of rejections, with reports not all in, promises to be 24 to 25 percent. The principal causes for rejection, approximately in the order given, were defective vision, underweight, hernia, and heart disease.

At first the percentage of rejections for underweight was very high. Subsequently we received orders from Washington to take many of the underweight men. In view of the fact that some of these cases were suspicious, we had already accepted a number of these men before the orders were received. Wherever a man was perfectly sound physically and underweight was the only defect, he was usually accepted, unless the discrepancy between the actual and the regulation weight was very great.

We were all surprised at the very large percentage of men who had leaky hearts. The number of these was disturbing. Without complete data it is hardly safe to make definite statements, yet, in the writer's opinion, there were fully 25 men suffering from this defect, that is, about 3 percent. Hernia was also very common, and many men were found suffering from this defect who did not realize its existence. The same is true with regard to the heart disease. We found men of athletic build, doing vigorous outdoor work and playing violent games, with serious heart lesions.

There was only one case of femoral hernia, and this man had been operated on for *inguinal* hernia, so, naturally, there was a recurrence.

We found very few cases of tuberculosis. One man called for the draft was in Texas on account of this disease. Not to exceed two or three others had signs of active tuberculosis. There were probably five or

more in addition to these who presented signs of a latent tuberculous focus somewhere in the lungs.

We found very little venereal disease. There were three or four cases of active gonorrhea, and possibly five or six of active syphilis. One man presented himself with a typical Hunterian chancer; three had mucous spots of the mouth; two or three, typical secondary eruption; and of course there were quite a number who presented tertiary syphilis. On the whole, however, the amount of syphilis was surprisingly small.

One of the surprises was the large number of cases of goiter. At least twenty men showed considerable enlargement of the thyroid. In several of these there was some increase of pulse rate, and in one or two some bulging of the eyes. One young man had already been operated on for goiter. In very few of these goiters (I can recall only one) was the disease marked enough to be thought cause for rejection.

Ocular defects were exceedingly common; in fact, this was the most frequent cause for rejection, although in case of doubt we always strained a point and took our man, believing that a young fellow who is otherwise sound should make a good soldier even though he wears spectacles. Such men may not be needed on the firing line, but there are dozens of positions in the army in which they can and should find useful employment. It is the opinion of our board that any man whose ocular defect can be corrected by spectacles should be accepted by the army and given employment in the quartermaster's department, medical department or elsewhere where good brains and strong muscles are of more value than the ability to use a gun.

The man with the "typical" pulse was very uncommon. I do not believe there were more than a dozen men with a pulse-rate below 76, nor more than thirty-five or forty in which it was below 80. The average was close to 100—if anything slightly above rather than below. Of course "nervousness" was responsible for this rapid action in many instances. It was not induced by overexertion, since the pulse was counted (generally directly from the heart through the stethoscope, so as not to induce self-consciousness) before the candidate was put through the simple exercises outlined in the regulations. Possibly the very general use of tobacco may have had something to do with the findings. Who knows? The slowest pulse found was 55, the most rapid, 166. In neither instance was there any disease of the heart.

The writer never realized what a tremendous field there is in dentistry until after he had looked into the mouths of a few hundred young men and seen the enormous number of snags and decayed teeth which have been and are being neglected by these young fellows. Several were found wearing plates. Hundreds had had their dental defects corrected by bridge or pivot work. There were hundreds of others who should do likewise. The usual excuse for the neglect was lack of money. Dental work *is* expensive. A man doesn't have to have very good teeth to enter the army. The regulations require only four opposing molars, and a "molar" is said to be any notched tooth. However, since the examinations were begun, orders have come from Washington to accept men with poor teeth, as long as enough are left to provide opposing teeth (artificial or natural) by proper dental work.

Flatfoot is a common cause for rejection. We found many men with low arches, but only a few who were in our opinion incapacitated on this account.

Varicose veins were not very common. Varicocele, however, was exceedingly frequent, but in only one or two instances was it marked enough to warrant rejection.

We found only a few deformities. Strangely enough not a single man with Pott's disease came up for examination. There were several slight lateral curvatures of the spine, but none great enough to warrant rejection. Many men had been operated on for appendicitis, one for gallstones, one for prostatic abscess, and one had had several ribs resected for empyema.

The lightest man was a poor fellow whom we examined in his home, all four of whose limbs have been paralyzed as the result of an attack of infantile paralysis nearly nine years ago. He was not weighed, but probably was under 75 pounds. Of those who came to the board room for examination, the lightest was 95 pounds, the heaviest was 302 pounds. Stripped, the latter was a sight. The shortest man was 4 feet 11 inches. This man was an Austrian, and was well formed, but of course was disqualified. We examined two men who were 6 feet 4 inches tall.

An examination of the urine was not made regularly, but only when other symptoms suggested it. It was significant, however, that among those examined we found three cases of nephritis, that is, the urine showed albumin and casts, in two instances both

hyaline and granular casts. These men were all in fairly good condition, only one having symptoms strongly suggestive of Bright's disease. There was no case of diabetes.

The examinations were held in the parish house of All Saints Episcopal Church. We had two large rooms, one for the assembling of the men and the other as a sort of clearing room, and two smaller rooms in which the first and second examinations were held. The arrangements for handling the men quickly and pleasantly were most satisfactory.

It is a pleasure to add that the men themselves were, with very few exceptions, good natured, and we believe patriotic. They went through this anything but pleasant physical grilling without complaint, and very few found fault with the results. There were many pleasant features connected with the examinations. Take the case of Angelo Chicolas, for instance. Angelo was 1-4 inch under height, but physically perfect in every way. He was accepted, and so delighted was he to be able to get into the army that on leaving the examination rooms he went immediately to the City Hall and took out his first papers and presented them to the board the same afternoon. Another man (an Irishman) was so anxious to go into the army that he offered to be operated upon for hernia if we would accept him.

The percentage of claims for exemption was very high—roughly speaking, about 70 percent. The majority of these were from married men, although there were a good many claims from young men with widowed mothers to support. There was also a scattering of aliens claiming exemption. In handling these claims the board has adopted the practice of sitting as a court, interrogating closely the applicants, the members of their families and such other witnesses as it seemed desirable to call in. The majority of claims were undoubtedly honest ones, although there were many indications of deceit and occasionally a case of what appeared to be downright fraud. For the last two weeks the board has been busy every afternoon and evening, sitting often as late as 11:00 and sometimes 12:00 or after each night. We have heard the stories of the domestic difficulties, the financial worries, and other vicissitudes of hundreds of people, until we know intimately something about the many problems of life in this great city, problems of which many of us had never dreamed. Many of these cases stirred our sympathies to the depths, and it was not always easy to make decisions which involved sending some of these young men off to the war.

The writer hopes that other readers of this journal who have had experiences similar to ours will tell us their stories for publication in CLINICAL MEDICINE.

ALFRED S. BURDICK.

Chicago, Ill.

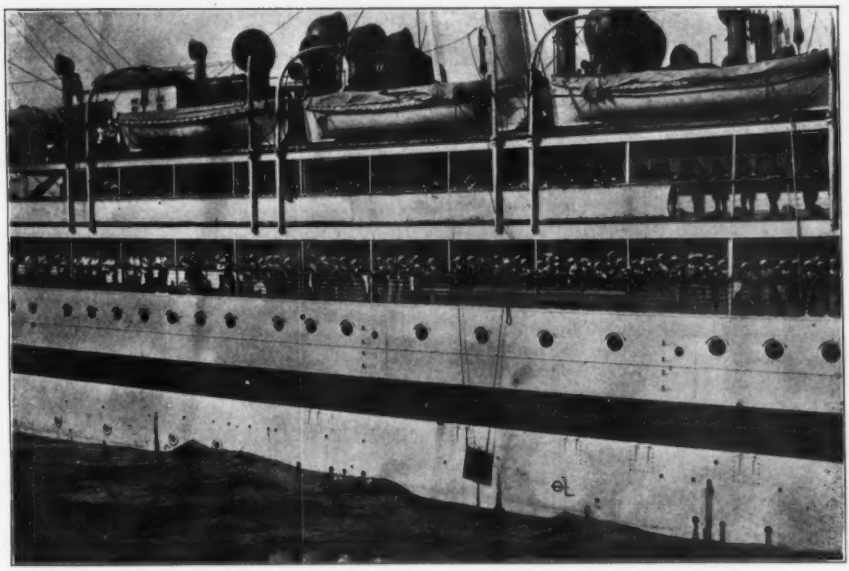
THE RANK OF MEDICAL OFFICERS IN THE ARMY

Medical journals have commented editorially upon the slowness of the response of the medical profession to the call for applicants to the Medical Reserve Corps. Some of the comments express a pained surprise at the failure of medical men to be ready to serve their country in its time of need; and it even has been suggested that physicians are lacking in patriotism if they do not disregard their own personal interests for the sake of volunteering for medical service.

The present writer is strongly impressed with the opinion that the hesitancy manifested by a great many physicians within the age-limit for service in the Medical Reserve Corps has a very decided foundation in the disgraceful occurrences of 1898. That short war cost the American people an alarming number of lives, sacrificed to typhoid fever, dysentery, malaria, and other preventable diseases, while the death rate of actual war casualties was very low. The conditions at the various military camps, in which modern sanitation and hygiene were dishonored in their nonobservance, were cordially laid to the charge of the medical service of the army, the lesson of the immeasurably better showing of the medical service of the Japanese army, in the war between Japan and Russia, shortly afterward, being pointed out to the discredit of our own medical officers.

It is true that sanitary and hygienic conditions in the military camps were terrible in 1898, and the socalled Dodge report on the congressional inquiry into the "Conduct of the War Department in the War with Spain" shows clearly that many, many lives were sacrificed foolishly, futilely, even criminally to neglect and red tape.

But, if the Dodge report is examined, it is evident that the blame for these sad conditions does not attach to the medical service of the army, but, rather, to the arrogant and deliberate neglect on the part of line-officers to pay any consideration to recom-



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RED CROSS NURSES SAILING FOR FRANCE

mendations made by medical officers. Requests made urgently and repeatedly, that unhygienic camps be changed and that faulty conditions be remedied, were neglected and insistent medical officers were severely reprimanded, if not court martialed. Even during the congressional inquiry, Major-General Brooke, for instance, displayed a mental attitude that was as stupid as it was wrong, in his silly insistence that his opinion was of greater importance than that of his medical officers.

While the European nations have recognized the importance of the medical service and have improved the standing and position of medical officers in accordance with the superior importance of their work and duties, the medical service of our army still occupies a subordinate position. The British Army Council has recognized its mistakes and has fully and honestly owned up to it, as is shown in a communication by Professor Vaughan (*Jour. Amer. Med. Asso.*, July 28, 1917, p. 292; and editorial, *ibid.*, p. 284). In the French and the German armies, medical officers have been granted an authority that is commensurate with the importance of their duties.

Despite the handicaps that still hamper the medical service of our army and navy, however, it must be said that these are not nearly as bad as they were in 1898. Today, the problems of camp-sanitation and camp-hygiene are under the direct jurisdiction of the medical officers, and the wisdom of this innovation became manifest, recently, in the camps in Texas and during the expedition into Mexico, where only a negligible number of preventable camp-diseases occurred and the death rate from these diseases was much less than among the civil population.

This is a showing that should encourage physicians to offer their services to the Government, confident that their efforts will meet with cordial and sympathetic response and that they will be supported in exerting their best efforts in behalf of the soldiers whose physical welfare is entrusted to their care.

Still, it must be admitted that the claims of the medical services, for official recognition, possess greater justification now than ever before. The present emergency and the serious problems confronting the United States present a suitable opportunity for dealing fairly, at last, with the medical service of the army and, incidentally, with the medical profession of the country—which means, with the people themselves. The medical service of the army and navy, and, thereby, the medical profession, should have representation in the President's cabinet, which would go far in raising the standing of

the medical men whose services are needed so urgently. More, the rank that is fully merited, owing to the importance of the work of the medical service, should no longer be withheld from its officers, and Senator Owen's amendment to Senate Bill 1786, providing for a suitable number of general officers of this service, should be adopted as a matter of simple justice. In this manner, physicians would be convinced that they would not meet with the same disheartening and frightful conditions that made the Spanish war a reproach to our country; that



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BRITISH TOMMY TENDING A WOUNDED GERMAN SOLDIER

they would have an opportunity of doing their work well and unhampered by ignorant interference on the part of line-officers. The medical service of the army, and the navy, as a career would thereby become more tempting and acquire incentive; and, finally, it would result in a more general and more generous response, on the part of physicians, to the request for volunteers in the Medical Reserve Corps.

THE CANCELING OF LEASES

Having learned of the difficulty experienced by many physicians, in canceling their leases, after having enlisted for service in the Medical Reserve Corps, the Chicago Rotary Club announces its desire to create a strong public opinion favoring the canceling of leases in such cases. If advisable, the matter can be carried for consideration to Congress, but, first the Physicians' Lease Committee of the Chicago Rotary Club wants figures and facts, and requests physicians all over the country to give such information as they may have concerning the refusal of landlords to cancel physicians' leases after the latter had joined the Medical Reserve Corps. Physicians who have information on this subject should communicate it to Mr. R. R. Denny, Chairman of Lease Committee, care of Dennos FoodSales Co., Chicago, Ill.

MORE HONOR FOR MAJOR SLEE

As doubtless some of the readers of CLINICAL MEDICINE know, Dr. Richard Slee of The Slee Laboratories has for some time been serving as sanitary officer of the great Allentown (Pennsylvania) camp for the training of young men for service in the Ambulance Corps of the United States Army. In this camp there are 5,000 men. Major Slee has recently received well deserved promotion, which is described in some detail in the *Allentown Morning Call* of August 8, 1917. We reprint this article herewith.

One of the greatest problems to cope with in any camp where there are so many soldiers is the proper sanitary measures needed to insure cleanliness and the disposal of all waste matter in a proper way. The work at the ambulance corps camp is very ably being taken care of under the direction of Major Richard Slee, of the Slee Laboratories, at Swiftwater, Pa., who is the sanitary officer of the corps. So well has this officer looked after this most important work in connection with the health and comfort of the men, that he has received personal commendation from the commanding officer.

The matter of proper sanitation is no small job. It is the duty of the sanitary officer to keep the camp in a sanitary condition. The general appearance and condition of the camp must be such that there is no occasion for placing the health of the men in jeopardy. Toward this end, the sanitary officer must see that the water supply is all right, that the milk comes up to the required standard, and that the various foods that are given the men are all of the desired kind. The buildings where the men are quartered must also always be in the cleanest condition possible, and this likewise falls to this department.

One of the great pieces of work entrusted to the sanitary officer is the matter of sewerage disposal. As this is a valuable link in the health of any community, it is considered one of the most important items to be looked after where there are upwards of five thousand men gathered in a place of the area of the fair grounds. Then, also, where there are so many men to be fed there will always be garbage to be collected. The work of disposing of this refuse also falls to the sanitary officer.

In connection with the position of Sanitary Officer, Major Slee also holds the positions of Sanitary Police Officer, Post Exchange Officer and Summary Court Officer. As a Sanitary Police Officer he is charged with the duties of keeping the entire camp clean, which includes the buildings and the grounds. For this purpose various details from all the sections are required to assist the



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THE WORK OF AIDING THE WOUNDED NEVER CEASES

Sanitary Officer. As the Post Exchange Officer, he is directly concerned in keeping account of the work being done at the Post Exchange, which is the camp store, as well as the auxiliary branches to the store, which include the barber shop, the cafeteria, the tailor shop, the shoe shining shop and the official organ of the camp, the "Post Exchange." As a Summary Court Officer, it is his duty to see that the prisoners are charged with the crimes they commit, and that they are properly punished for the committal of these crimes, as well as to judge cases and assign same.

Major Slee is well qualified for the position with which he is charged. His greatest work in the line of sanitary effort was done at Gettysburg in 1913, during the reunion of the veterans' encampment on the Gettysburg battlefield grounds. The camp had been fitted out to accommodate 40,000 veterans, and it fell to the lot of Major Slee to be named the Chief Sanitary Officer of the Third Division of the encampment. In his line of duty his splendid work was noted and appreciated, and this later netted him a commission as Major in the Medical Reserve Corps, of the United States Army, which commission he still holds.

SOME OBSERVATIONS DURING THE RECENT EXAMINATION OF CONSCRIPTED MEN FOR THE ARMY

1. Most of the subjects had tachycardia—not natural, however. The occasion produced it.

2. All scrotal conditions, such as hydrocele, varicocele, epididymitis, orchitis, and so on were invariably found on the left side.

3. Practically all colored candidates are flatfooted but have perfect teeth.

4. Very few subjects were rejected on account of their feet.

5. We found some who thought they were totally disabled because of "stomach trouble," "nervousness," and so forth.

6. We found a number who ought to wear glasses but do not.

7. A number ought to be circumcized (not particularly in order to qualify them for army service, though).

8. Some had active, perceptible gonorrhea.

9. We had to inconvenience some blind men, epileptics, and paralytics, by making a reexamination.

10. We found some men hard to examine, because they were deaf or could not speak English.

11. Some who do not know the English letters were asked whether they could see the small-type line of letters at the bottom of the test card.

12. The first day's work seemed harder than the second and third days.

O. C. CHURCH.

Glenn Carbon, Ill.

CONSCRIPTING PHYSICIANS

Dr. C. H. Gallagher, of Ithaca, New York, sends us the following clipping from *The Ithaca Journal*.

The physicians of the country are said to be slow to respond to the call to service in the army medical

corps and one hears from official source that conscription may be necessary.

One reason assigned for the failure of doctors to come forward is that they have been alarmed by stories of a very high mortality rate among physicians serving in the war, reports, by the way, which like other yarns of abnormal fatalities seem to be without fact. This alleged "reason" should not be taken too seriously. The public will hardly believe physicians as a class capable of timidity or cowardice.

Another and more logical explanation for physicians' reluctance to enter the army's medical service is at hand. It is the apparently shabby treatment the army gives to physicians. One hears no reports of the navy's failing to obtain skilled medical men. The navy has all the physicians and surgeons it needs.

In the navy a physician may advance eight numbers. Entering as a first lieutenant, he may eventually win promotion to an admiral's job. And with the advancement goes an increase in pay. He can rise as high as $8,000 a year. In the army the physician gets $2,000 as a lieutenant, $2,500 as a captain, and $3,000 as a major. And then he stops. He can go no further in rank or salary. Hardly an alluring prospect for the average successful physician who abandons home, congenial surroundings and a practice that may range anywhere from $3,500 to $5,000, $10,000, or even $25,000 or $50,000 a year. Like the rest of us, most doctors are human. If the army gave the physicians as fair a chance as the navy does the need for conscription would vanish.

PHYSICIANS' WAR-RELIEF

According to an editorial article in *Paris Médical* for June 9, the physicians of Uruguay have collected 34,000 francs (almost 7000 dollars) for the benefit of French physicians who are in need of "war-relief." The editorial expresses the heartfelt gratitude of the French medical profession for this testimony of sympathy of physicians living in Latin-American countries and refers to the donation as a proof of the solidarity of physicians as a class, as well as of the close relations subsisting between the members of our profession in France and in Latin America. Similarly, a deep feeling of gratefulness is voiced for the collection now being raised in Canada for the cause of the "war-relief" as well as for benefits to come from physicians in the United States.

FOR LOCAL ANESTHESIA

In the case of cranial war-injuries, Captain J. Anderson, of the British Army Medical Service (*Brit. Med. Jour.*, July 14), urges early and complete operation. In his experience, a local anesthetic is preferable in these cases, for the reason that the operator can gauge much more accurately the general condition of his patient and the limits of legitimate surgery, while the postoperative shock becomes almost negligible. While it may be unfair to persist with local anesthesia in patients who are very nervous, the author has found it necessary in only 3 percent of his cases to resort to general anesthesia.

After a preliminary injection of morphine, half an hour previous to operating, Captain Anderson blocks the wound-area completely with

Novocain	3-4 percent
Magnesium sulphate	1-2 percent
Sterile water or saline solution, to make	100 parts

It does not appear necessary to pay any great attention to the preparation of an isotonic solution, since the author has seen no bad results from the use of solutions of widely differing strength.

THE KID HAS GONE TO THE COLORS

The Kid has gone to the Colors,
And we don't know what to say;
The Kid we have loved and cuddled
Stepped out for the Flag today.
We thought him a child, a baby
With never a care at all,
But, his country called him man-size,
And the Kid has heard the call.

He paused to watch the recruiting,
Where, fired by the fife and drum,
He bowed his head to Old Glory
And thought that it whispered "Come!"
The Kid, not being a slacker,
Stood forth with patriot-joy,
To add his name to the roster—
And, God, we're proud of the boy!

The Kid has gone to the Colors—
It seems but a little while
Since he drilled a schoolboy army
In truly a martial style.
But, now he's a man, a soldier,
And we lend him listening ear,
For, his heart is a heart all loyal,
Unscourged by the curse of fear.

His dad, when he told him, shuddered,
His mother—God bless her!—cried;
Yet, blest with a mother-nature,
She wept with a mother-pride.
But, he whose old shoulders straightened
Was granddad—for, memory ran
To years when he, too, a youngster,
Was changed by the Flag to a man!

—WILLIAM HERSCHELL, in *The Indianapolis News*.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

[*Continued from August issue, page 610.*]

I CANNOT help lamenting certain tendencies in our socalled civilization, still, I do not pretend to know a way of correcting or diverting them. Man, today, is aggressive, ambitious, commercial, and very much a bully. With his two big fists and his blood-vessels filled with hot blood, he crushes his way. There is but little of the quiet, friendly, simple, cultured life lived these days. The world seems to be aflame with greed and hate—the spirit of war is abroad in the land. I deplore these conditions; for all that, I am as likely to be right, possibly, as the lusty partisan or bigot amuck with his battle-ax of violence. "Reason," says Goethe, "is the property of an elect few." Sanity, equanimity, and true courage are its legitimate offspring. Few there are that are healthy—in the full sense—and fewer that are wise.

—

I wonder, sometimes, whether the fault lies within myself only, because I long so for fitting companionship. The sordidness and narrowness of men! How they are wrapped up in themselves and their little interests! And how little, how insignificant their interests are after all!

I feel very much as Bal felt in the Hindoo fable. Vishnu spake, "O, Bal! take thy choice: with five wise men shalt thou enter hell or with five fools pass into paradise." Gladly answered Bal: "Give me, O Lord, hell with the wise; for, that is heaven where the wise dwell, while folly would make of heaven itself a hell!"

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As I grow older, I turn more often to my books—not war-books, thank God, but, to the best in all the great departments of human thought; books that give harmony to our moral and intellectual activity and idealize man and nature. We should read the immortal and universal poets, until their music and their spirit are a part of our own nature; books, also, over which we can laugh and weep; that have in them truth, human nature, and, withal, sound teaching in honesty, manliness, gentleness, and patience.

What would my life be without books! They employ my mind and lift me out of myself. I have books for every mood and every condition. There is such repose in good literature! Balzac feelingly says: "The tranquillity and peace that a scholar meets is something as sweet and exhilarating as love. Unspeakable joys are showered on us by the exertion of our mental faculties, the quest of ideas and the tranquil contemplation of knowledge—delights indescribable, because purely intellectual and impalpable to our senses."

A similar thought is finely expressed by Longfellow:

The love of learning, the sequestered nooks,
And all the sweet serenity of books.

And Goethe, in "Faust," portrays the student's inmost heart:

When in my study-chamber nightly
The friendly lamp begins to burn,
Then in the bosom thought beams brightly,
Homeward the heart will then return.
To peace are lulled life's wild desires,
The hand of passion lies at rest;
The love of God the bosom fires,
The love of man stirs up the breast.

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Only the scholar can adequately comprehend the scholar's quiet ecstasy—as only the violinist can divine the violinist's skill or the artist correctly judge the painter's art. There is an inexpressible charm in contemplative thought, blended, as it is, with the feelings common to mankind—tender almost as love, yet, calmer and more entrancing because of its impersonality and the atmosphere of the ideal with which it is suffused. I can readily imagine the tranquil glow which warmed the imagination of Amiel, whose "journal in time" is replete with delicate fancy, reflecting the writer's subtle refinement and gentleness of pure emotion. In closing his record of private feeling, one is half conscious of some exquisite perfume, such as the scent of violets or of Chilean jasmine.

"Solitude," said Landor, "is the audience-chamber of God." In the silence of the

study's seclusion, in lonely reading and meditation, have the rarest and gentlest as well as the most gifted intellects been nurtured and sustained. But, of this quiet, meditative world in which the recluse dwells, in which Carlyle "nourished his mighty heart" and the highest triumphs of the mind have been attained, the vast majority of men know nothing, for, the scholar's labors and aspirations are all his own and sufficient unto themselves.

How I should like to tell you about my books and what I read from time to time! I am tempted to comment upon passages in certain books during the next few months; for, if the majority of readers of "Just Among Friends" wish, as I do, for a mental pabulum other than murder (war), medicine, money, then they would gladly join me in gossiping with old Montaigne, moralizing with Sir Thomas Browne, laughing with Rabelais, dreaming with De Quincey, philosophizing with Emerson and Thoreau—indeed, we would feast with yon worthies and banquet with the celestials, as inclination or whim pleased us. What say you?

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A doctor, above all men, should be wise in everything. He should know men—all sorts of men. He should be so versatile and well read that he could intelligently discuss religion, politics, political economy, sociology, philosophy, music, poetry, arts, history, literature in all its phases; in a word, his mental machinery should be large and capable of being readily shifted at will, to suit the figures that move on the mental stage of his patient's minds. In questions of race, he should see behind and before—progenitors and inheritors alike. Books and their makers should be the objects of his affectionate regard. He should, like Lamb, kiss a volume of Burns with tenderness and bow with reverence before Shakespeare or Bacon.

The thoughtful reading of good books tends to make a thoroughly enlightened, cultivated man. Yet, it is amazing to see how few people read intelligently. Even in the selection of books there seems to be little purpose save the momentary gratification of what one might call the minor senses—delight in meaningless novelty, love of trite adventure and paltry nothings from which the mind derives no permanent benefit. "Reading without purpose," says Bulwer, "is sauntering, not exercise. More is got from one book upon which the thought settles for a definite end in knowledge than from libraries skimmed over by a wandering eye. "A cottage flower gives honey to the bee, a king's garden gives none to the butterfly." And Locke says wisely; "Reading furnishes the mind only with the materials and knowledge, it is thinking that makes what we read ours."

I do not wish to imply that all books should, necessarily, be read, more than written, from a highly didactic or ethical motive. A man may read "Pickwick Papers" for relaxation, and from pure love of fun and with the same creditable intent he would devote to Fox's "Martyrs" or the inimitable and, happily, only Mr. M. F. Tupper. For, I hold it quite as important to the welfare of the human soul—the soul of humor—to revel for an hour in immortal association with Messrs. Tupman, Winkle, Weller, and such, as to be thrilled by the profound, yet, hopelessly prosaic, knowledge that "a babe in the house is a well-spring of pleasure."

It is thorough earnestness of aim for which I am contending—the strong, healthful, and abiding impression upon our thoughts that, in a measure, affects our judgment of society and of ourselves, and leaves behind it a memory of something sound and good, possibly very sweet and tender, possibly infinitely sad, possibly neither extreme, yet, certainly, stimulating. "Read few books well," said Horne Tooke, himself a noted scholar; and he adds, by way of practical advice, what may well comfort one of short memory: "Do not perplex thy memory with dates and names; we can not remember the special dish we had long since for dinner, yet, the body was nourished all the same." In other words, we need not remember, "lest we forget."

It is safe to say that, together with much that is witty, well written, and engaging, not for a generation has so much unconscionable rubbish been heaped upon us as in these days. Only a wise discrimination, careful knowledge, and clear insight can properly guide us in a wise and sensible selection of this *fin de siècle* literature, in which there is little of permanent worth for the young, only a meager pleasure for the adult, and for those in declining years —nothing.

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Usually a great reader of good books, especially if he be possessed of sentiment, is a good conversationalist. There are many doctors who can talk well on medical subjects and a few who can converse. William Dean Howells, in an article quoted in the July number of *Medical Review of Reviews*, referring to doctors, says; "No other sort or con-

dition of men talks half so well, so intimately, so wisely—the physician can philosophize life as no other can, and he is merciful to human frailty in the proportion of his large and deep experience."

Such a doctor as Howells refers to (and it is a pity there are not more such) has, in his intelligence, the reflection of breadth and the look of wisdom. His liberality of judgment is the result of facile intercourse with various minds and books, and it is a pleasure to converse with such a man. He would talk, probably, not of processes, but of results, of finance, but not of the machinery of the banker's office; of commerce, but not of lines of railway or steamships; of government, but not of officeholders or of officeholding; of polity, not politics; of religion, not churches. One could not guess at the end of the conversation of a truly cultured man in what part of the world he lived, with what political party, if any, he acted, with what denomination he worshiped, in what occupation he had made his money. He would ask no questions nor anticipate any. There would be no show of vanity, bigotry, intolerance, dogmatism or aggressiveness.

How little real, true conversation we listen to or indulge in nowadays! Most of it smacks of war; is flippant, suggestive or actually vile; and so much latterday conversation (?) clinks of "money." Thoreau says; "Hollow and ineffectual, for the most part, is our ordinary conversation. Surface meets surface. When our life ceases to be inward and private, conversation degenerates into mere gossip."

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My idea of good conversation is that those who take part in it endeavor to find points on which they all can sympathize in feeling and seek a common basis. It will not be pertinent for anyone to present his own individual views, for the sake of argument or debate. That is proper for the platform. Conversation, however, is sympathy and magnetic endeavor, and, although the leader may not always succeed in touching those fine chords in every heart that will inspire the listeners to respond to one's own experience, that should be his endeavor. Conversation can not be considered a success unless that takes place. Conversation is not a comparison of opinions; each person should avoid referring to the opinions of others. Conversation should be magnetic; it should not be an effort of the will; each should speak because he must or be silent because he must. That is the kind of freedom that conversation practically involves. It is a very tentative performance.

Conversation is a gift, not of culture and erudition so much, as of temperament. Success in conversation involves a certain harmonious combination of intellectual and moral traits.

There is nothing more tragic, than to look into modern homes and see what excellent people inhabit those apartments, each and all desiring to communicate with one another, each desiring to impart his deepest secret to the others, and on the most solemn of all topics; and, yet, how difficult it is for them, and how each retreats, fails, because the fine arch between soul and soul, heart and heart, mind and mind can not be constructed and thrown across from one to the other. Would it not be a very great service done to all people if they could find how that sympathetic intercourse could be secured?

Only as sentiment predominates over intellect, only as sympathy subdues thought and solves it, is conversation possible. Intellect, far from being communicative, is exclusive; the sentiments are inclusive, and no possible culture of the intellect can give to anyone the power of conversation, unless the sympathies, the sensibilities are tender, delicate, and fleet; unless the heart can flood the mind; unless sentiment can carry thought. And it is their fusion that we seek. There is sex, therefore, in conversation as in all fine things. And only as sentiment (you may prefer the word friendship or love) fills your thought and crystallizes it in fine sentiment, illuminating it with its own freshness, only as you bestow it yourself, do you get what you seek in conversation.

The absence of this sex-element in conversation causes mutual repulsions wherever it is manifest. When, for example, an intellectual woman and an intellectual man meet, you may get literary talk, you may get learning, you may get thought; but, as they touch each other only through the intellect, you never get conversation. The moment either subordinates the intellect, there comes sympathy and union. *Persons* converse, because a person unites the threefold qualities of thought, sentiment, and will, and thinks and acts in harmony. An *individual*, on the other hand is not harmonious; the passions may predominate, and then we get debate, argument—we quarrel. But, persons can converse. There can be no individualism in Paradise. Individualism should be left out of the house—it should not enter the parlor; it belongs to animals. Leave the

passions outside. Otherwise, conversation will not be possible, nor sympathy, nor friendship.

Whoever debates to a prisoner of individualism—one who yet is in the house of the senses—still is subject to fate, can not calculate, is afraid to trust himself, lest he should say what afterward he will regret. The person has no such fear. He is in harmony with himself and can trust himself. Whatever may be spoken, he says: "I shall receive it as if it touched me not; for my individuality is no part of me—it is that remnant of my ancestry, which I have not yet put aside; it is the half-dozen old ladies and gentlemen whom we call father, mother, grandfather, grandmother, and so on backward, still lurking in me. Personality is the fine flowering of all culture.

Here I am writing for a medical journal of books, culture, conversation, personality, and such things. But, how do you like it? Which would you prefer for a while, books or bowels?

AFTER THE FIGHT

It is better to lose with a conscience clean
Than to win by a trick unfair;
It is better to fail and know you've been,
Whatever the prize was, square,
Than to claim the joy of a far-off goal
And the cheers of the standers-by
And to know down deep in your inmost soul
A cheat you must live and die.

Who wins by trick may take the prize,
And at first may think it sweet,
But many a day in the future lies
When he'll wish he had met defeat;
For the man who lost shall be glad at heart
And walk with his head up high,
While his conqueror knows he must play the part
Of a cheat and a living lie.

The prize seems fair when the fight is on,
But save it is truly won
You will hate the thing when the crowds are gone,
For it stands for a false deed done.
And it's better you never should reach your goal
Than ever success to buy
At the price that knowing down in your soul
That your glory is all a lie.

Among the Books

BUCK: "GROWTH OF MEDICINE"

The Growth of Medicine, From the Earliest Times to About 1800. By Albert H. Buck, B. A., M. D. New Haven: Yale University Press. 1917. Price $5.00.

In the preface to the present volume, the author refers to the fact that there are not many physicians in the United States and Canada who possess even a slight knowledge concerning the manner in which the science of medicine has attained its present power as an agency for good or concerning the men who played the chief parts in bringing about this great result. He condones this lacking of erudition by saying that in a newly settled country the training of young men for the degree of Doctor of Medicine must, necessarily, be almost entirely of a practical character, so that, consequently, the teaching of such a specialty as the history of medicine would be quite out of place; also, that the treatises on this subject available for English-speaking physicians are of rather too scientific a character to appeal either to the undergraduate or to the busy practitioner.

The first of these two factors undoubtedly has lost its validity, as the author himself points out, for, not only has our country developed practitioners and clinicians of the highest degree of scientific training and practical efficiency in general medicine and in surgery as well as in the specialties, but American research-workers and investigators easily rank among the foremost of those who are striving to explain that which is yet dark in our knowledge of physiology, both normal and pathological, to find the causes of diseases and to discover means for their removal.

Nor could it be said any longer that the study of the history of medicine is neglected in our country. True, ponderous historical treatises written by American physicians and dealing with matters medical or surgical are few, nor have we produced monumental works like those by Haeser or by Neuburger and Pagel; perhaps we must admit that we do not boast of a historian of the type of a Sudhoff and even that the study of medical history is a hobby fostered and indulged in by relatively few men. Nevertheless, of American physicians who have popularized the study of medical history, we are proud of men like Garrison, Packard, Howard Kelly, Mortimer Frank, and also Sir William Osler—whom we still claim as an American physician—besides many others. Truly, it must be admitted that the hardheaded, intensely practical American physician is, yet, not without the graces of the "humaniora", that he does not think it amiss to devote time and effort to the study and the teaching of branches of knowledge that may not lead immediately to the greater acquirements of dollars. Indeed, it is a fact that many of the medical journals published in the United States of America contain frequent communications of historical interest and that the historical mode of research is gaining in popularity among students and scholars as well as among practitioners.

Nevertheless, the undertaking of Doctor Buck to delineate and trace the growth of medicine from the earliest times merits our cordial gratitude, since it has resulted in an attractive volume in which most facts of general interest are given. Personally, the Reviewer is inclined to regret that the work ceased at the turn of the nineteenth century, since to students with that practical trend of thought that is commonly attributed to Americans as characteristic it would be of more immediate interest to be informed of the growth of medicine during the nineteenth century, for the reason that it was then that the study of physiology, pathology, biology, and all their ancillary and derivative sciences and disciplines became intensive and extensive and led to the remarkable growth that is manifested in the progress made both by surgery and internal medicine. The history of bacteriology, the study of infections, the story of immunology, they all read like fairy-tales, absorbing and intensely interesting. The studies inaugurated by Virchow, Liebig, Pasteur, Lister, Koch, and a great many others, not to forget the most recent investigations concerning the endocrine glands, have culminated in a mass of accumulated information that gives at least the traces of the positive knowledge for the understanding and rational treatment of disease in a degree

which it has not been possible to approach hitherto.

It is to be sincerely hoped that a historian of the nineteenth century will make his appearance at an early date and that he will succeed in depicting with a masterly stylus the wonderful and fascinating story of the progress of medical sciences during these most recent times. In this manner, a fuller understanding of our present problems and investigations will be presented by such a recital, and greater interest would be aroused for delving into the story of medical thought during earlier and earliest times.

Not that we desire to depreciate Doctor Buck's beautiful work; nothing is further from our thoughts. We prize it and admire it; still, we regret that the other historical work, the absence of which we deplore, was not given precedence.

AUSTIN: "DISEASES OF THE DIGESTIVE TRACT"

Diseases of the Digestive Tract and Their Treatment. By A. Everett Austin, A. M., M. D. With 85 illustrations, including 10 color plates. St. Louis: C. V. Mosby Company. 1916. Price $5.50.

The Reviewer would be inclined to comment favorably upon this book even if he had read nothing but the beginning of the third chapter, entitled "Examination of the Patient," where this phrase is used advisedly rather than examination of the stomach or gastrointestinal tract. The author emphasizes, very correctly, what we have stressed so often, that a patient is not all stomach, or all heart, or all ovary, or all what-not, but that in every case of disease, no matter how localized the symptoms may be, the totality of the organism and of its individual parts must be investigated with greatest care, in order to arrive at a correct appreciation of existing irregularities and pathological processes.

Doctor Austin's book, therefore, is not so much a special (in the sense of specialistic) treatise on diseases of the digestive organs, but, rather, a treatise on diseases of patients who exhibit symptoms and signs of irregularities and disease more particularly with regard to the digestive organs, not forgetting the possible difference it makes as to whether they are primary or else secondary to diseases of other organs.

The treatment of the subject, which is not an easy one, shows a wide practical experience. The therapeutic suggestions bear evidence to the fact that the author by no means is a therapeutic nihilist, since he employs and recommends a considerable variety of drugs that may be utilized to advantage in the treatment of many digestive disorders. We have consulted several representative portions of this book with much care and great benefit.

CRAGIN: "OBSTETRICS"

Obstetrics: A Practical Textbook for Students and Practitioners. By Edwin Bradford Cragin, A. M., M. D.; assisted by George H. Ryder, M. D. Illustrated with 499 engravings and 13 plates. Philadelphia and New York: Lea and Febiger. 1916. Price $6.00.

The methods advocated in the textbook before us are based upon the statistical results of the Sloane Maternity Hospital at New York and upon the experience gained by the author in the hospital and in private practice. He holds that the ordinary textbooks, while very valuable for reference, are too large for the undergraduate student, and, hence, he has made it a point to cover the subject concisely and to eliminate all unnecessary discussion. This, we believe, has been satisfactorily accomplished.

The author lays stress upon the fact that, at the present time, pregnancy but rarely is a truly physiological process and that pathological features intrude in the majority of cases. Hence, the necessity of early and continued medical supervision. This being granted, it becomes incumbent upon the physician, the Reviewer submits, to learn far more about normal and pathological pregnancy than he knows at the present time. Indeed, it would be well for the general practitioner to sweep his mind clean of any ancient wrong ideas and superstitions regarding the pregnant woman and to learn how to guide her to a successful accouchement, for the best interests of herself as well as her progeny.

There are many points in Doctor Cragin's book that are very well taken, it would lead us too far, though, to enter deeply into the subject-matter. The physiology and pathology of pregnancy, as also of labor and of the puerperium, are well described. The Reviewer is strongly in favor of the author's present custom to instil argyrol, and not silver nitrate, into the baby's eyes. The method of examining the fetal heart-sounds, eliminating extraneous sounds (especially those caused by the finger supporting the

stethoscope) by means of a rubber band, is an excellent one. His manner of tying the umbilical cord is superior to any that the Reviewer ever has seen described. The author's obstetrical bag is roomy and easy to keep in order. Years ago, while he still was in practice, the Reviewer used for his obstetrical outfit a small "dress-suit case" like the one described, and he found it very serviceable. Doctor Cragin's book deserves careful study and can be highly commended.

MEDICAL CLINICS OF NORTH AMERICA

The Medical Clinics of North America. Published Bimonthly by The W. B. Saunders Company, Philadelphia. Price, per year, $10.00 Johns Hopkins Number.

As announced in the last issue of this journal, this publication is a continuation of the *Medical Clinics of Chicago*. The first number of Volume 1 is a "Johns Hopkins Number" and contains contributions by Professors Theodore C. Janeway, Lewellys F. Barker, Herman O. Mosenthal, and several others. The value of personal case-teaching is exemplified beautifully, for instance, in the clinic of Doctor Janeway, in which a student is charged with furnishing the report of the case to be considered and is expected to present a detailed study of this case, the professor then enlarging upon the subject and thus presenting it to the students in an interesting and attractive manner. The Reviewer is strongly impressed in favor of this publication and only can repeat the appreciative remarks he has made before concerning the *Medical Clinics of Chicago* and the other similar publication, namely, *The Surgical Clinics of John B. Murphy*.

BLAIR: "BOTANIC DRUGS"

Botanic Drugs: Their Materia Medica, Pharmacology, and Therapeutics. By Thomas S. Blair, M. D., Editor of *The Medical Council*. Cincinnati: The Therapeutic Digest Publishing Company, 1917. Price, $2.00.

This volume is dedicated to "the rational optimist in therapeutics." It preaches and vindicates *rational* drug treatment, which is exemplified in the admonition (p. 24), "if you don't know what a drug does, leave it alone." In order to know what a drug does or can do, however, it is necessary to employ it, not only in healthy animals, but also in sick animals and in sick people. The knowledge of drug action is acquired by studious observation. The results of the latter are offered, conservatively and rationally, yet, confidently, in this treatise, which should prove a godsend to many physicians; certainly to all those who care to extend to their patients the advantages of all possible measures appropriate for the alleviation of their ills. Doctor Blair's book is a mine of information. Rightly used, it will prove a reliable guide for drug treatment and is cordially recommended for careful study and constant reference.

"INTERNATIONAL CLINICS"

International Clinics: A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, etc. Edited by H. R. M. Landis, M. D. Philadelphia: The J. B. Lippincott Company. Published in four annual volumes. Price $2.00 a volume.

Of the 26th series (1916) of the "International Clinics," the Reviewer has to acknowledge volumes one and four, the second and third already having been referred to. Of the 27th series (1917), the first 2 volumes are before us.

The "International Clinics" contains a remarkable collection of special articles on practical subjects and of reviews on many important topics in the entire domain of medicine and surgery, including the many various specialties, as also public health. Not a few of these articles are monographic in the thoroughness with which the subjects are treated, and in their totality the volumes of the "International Clinics" make up a medical library that is worthy the possession and study of every physician.

One of the notable papers in the first volume for 1916 deals with the drug-therapy in cardiovascular diseases, contributed by Dr. Thomas Satterthwaite, of New York. The author of this worthy communication takes up the various drugs that are of value in affections of the heart, and it is of importance that he does not limit himself to the remedies included in the U. S. Pharmacopeia—which, indeed, he declares as not fit to be our guide either in faith or practice, since "even the last edition fails to recognize some of the drugs . . . . that may be used with advantage, while it puts its official seal on others that should have no place in any national pharmacopeia."

The author pays fitting tribute to manufacturing houses for their energy, skill, and

resourcefulness, and for their success in isolating potent principles, so as to adapt them to our therapeutic needs. Indeed, he says that without their handbooks at his side in his daily office practice he should not be able to keep up with the principles and practice of modern therapeusis. This is an acknowledgment of the excellent work done by many manufacturing houses that is both gracious and, we believe, deserved.

In enumerating the drugs of service in cardiac diseases, the various preparations of digitalis very naturally occupy an important place, and much space is devoted especially to strophanthus. In addition to these and other official preparations, we find, however, mention made also of such unofficial but none the less highly prized drugs as convallaria majalis, adonis vernalis, cratægus oxycanthus, besides a number of others, including, actually, cactus grandiflorus.

"FIRST LESSONS IN SPOKEN FRENCH"

First Lessons in Spoken French for Doctors and Nurses. By Ernest H. Wilkins, Algernon Coleman, and Ethel Preston. Chicago: The University of Chicago Press. 1917. Price 50 cents, net, 54 cents postpaid.

The purpose of this little book is, to help American doctors and nurses (1) to understand what may be said to them in French, (2) to make themselves understood in French, and (3) to understand printed French.

Personally, the Reviewer always feels lost when he finds a guide to any foreign language employing phonetic spelling, still, it must be admitted that some phonetic indications of the foreign sounds are indispensable. A rather careful examination of the little volume under consideration gives the impression of much painstaking work and thought having been expended in its preparation. Certainly, the authors, who are associated with the department of Romance languages and literature of the University of Chicago, are well qualified to prepare such a work, and there is a very urgent need for it at the present time.

This book is a companion volume for a "French Text for Men in Military Service," published during July, and we are informed that a third volume is about to be issued during the month of August, under the title of "Le Soldat Américain en France." This latter volume naturally is designed to supplement both of the elementary texts.

While the most effective teaching of a foreign language is by the *viva voce* method, we must admit that concise guides with phonetic indications for pronunciation and affording excellent vocabularies constitute valuable additional means of study. The present war probably will result in rendering a knowledge of the beautiful French language far more popular and general than it ever has been in the past.

"TOXIC JAUNDICE OF MUNITION WORKERS"

The Origin, Symptoms, Pathology, Treatment, and Prophylaxis of Toxic Jaundice Observed in Munition Workers: Being a Discussion by the Sections of Medicine, Pathology, and Epidemiology of the Royal Society of Medicine. (January, 1917.) New York: Longmans, Green & Co. Price $2.50, net.

This pamphlet of 106 pages deals with one of the many important industrial diseases that have come to the foreground since the beginning of the war. The various phases of toxic jaundice are considered in great detail, the most momentous inferences to be drawn from the discussions being those relating to prophylaxis.

Among those taking part in the discussion, the following are enumerated: Dr. T. M. Legge (Medical Inspector of Factories), Viscount Chetwynd, Capt. Matthew J. Stewart, Dr. Benjamin Moore, Dr. Bernard Spilsbury, Dr. P. N. Panton, Dr. H. M. Turnbull, Dr. I. Feldman, Dr. E. L. Collis, Dr. W. J. O'Donovan, Maj. P. S. O'Reilly, Maj. H. Morley Fletcher, Fleet-Surgeon R. C. Munday, and Surgeon-General H. D. Rolleston.

BROOKS: "DIAGNOSTIC METHODS"

Diagnostic Methods: A Guide for History-Taking, Making of Routine Physical Examinations, and the Usual Laboratory-Tests Necessary for Students in Clinical Pathology, Hospital Internes, and Practicing Physicians. By Herbert Thomas Brooks, A. B., M. D., Third edition, revised and rewritten. St. Louis: The S. V. Mosby Company. 1916. Price $1.00.

The purpose and scope of this little book is fully indicated in the subtitle. While it is intended particularly for students and hospital-internes, general practitioners will find in it many useful hints and matters of valuable information. Very sensibly, the laboratory-tests have been freed from obsolete, and unnecessary methods and details. In short, the book is a very helpful guide and aid.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6325. — "Premature Hoar-Hair. Hair-Dye?" H. G., California, has as a patient a young man (too young to have gray hair) whose locks are becoming quite white, and he asks whether there is any treatment by means of which this process may be arrested. The patient is in every way healthy.

There is no really effective treatment for canities, especially when only a portion of the hair has changed color. In many cases of socalled pilosis circumscripta, the condition will be found to extend through several generations. Personally, we should advise this young man to let well enough alone; but, of course, if he wishes to, he can easily dye his hair a deep-brown or black. Practically any depth of shade can be secured by the careful application of a mercuric-chloride solution of 2 grains to the ounce, followed by one of sodium hyposulphide, of 1 dram to the ounce. The solution should not be allowed to touch the scalp; in fact, poisonous dyes are not to be advised, as a rule. A 1.75-percent solution of silver nitrate will produce a black color, the hair (avoiding the skin!) being thoroughly moistened with it and then dried in the sunlight.

Kaposi gives the following formula for a brown hair-dye: Pyrogallol, 40 grains; cologne-water, 75 drops; rose-water, 3 ounces. Apply, with care, to the freshly washed and dried hair.

The following 2-solution dye also may be used: No. 1—Bismuth citrate, 1 ounce; rose-water, 2 ounces; distilled water, 2 ounces; alcohol, 5 drams; carefully adding ammonia-water, drop by drop, to form a clear solution. No. 2—Sodium hyposulphite, 12 grains; distilled water, 4 ounces. No. 1 is applied in the morning, and No. 2 in the evening of the same day.

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QUERY 6326.—"Cystitis?" J. E. J., Missouri, asks for help in the case of a married woman, age twenty-six, weight 106, housewife.

"This woman" he writes, "came to me some three months ago, complaining of being troubled with a burning sensation just before or after urinating. She miscarried at three months, because of this agonizing sensation, as well as because of other symptoms of even severer nature. Her husband had gonorrhea two or three years before marriage. Tests failed to reveal cystitis or colon-bacilli. Her urine proved normal. She has an incomplete prolapse of the uterus and there is tenderness when attempting to replace it. She is irritable, nervous, does not sleep well, and is despondent. I have helped her some; she has gained between 5 and 6 pounds, still is very little better. Stimulating foods make conditions worse. She cannot bear traveling. Her stomach rebels against strong medicines; I must give small doses, often repeated. None of the pessaries tried can be borne. Recently I have started using a wool pack for support."

It appears that the trouble, whatever it may be, began twelve years ago, that is, probably about the time when the menses were established or soon afterward. It undoubtedly would have a bearing upon the case to find out something about the onset of this trouble and what seemingly brought it on. Did it follow upon exposure; was it connected with disturbance of menstruation; was there any trauma or injury of any kind suffered by the then child of fourteen? Is there anything in the history of twelve years ago and of the intervening period that might throw light upon the case?

You say that your patient miscarried at three months. Did she miscarry only this once or was it several times, and what were the other symptoms of "severer nature"?

The fact that the husband had gonorrhea two or three years before marriage does not seem to have any immediate connection with

this condition, although it may have contributed to make it more refractory to treatment. What you say regarding the tests we assume to mean that the urine does not contain colon-bacilli and that it is normal chemically. If it is also normal microscopically, showing no tissue-elements referable to an inflammatory condition of the bladder, the diagnosis of cystitis probably would have to be revised.

The partial prolapse of the womb may be of importance as explaining the obstinacy of the case, although it hardly is of etiologic value. As to the woman's nervous condi tion, that, is quite natural, as you, of course, understand.

Now, doctor, after this review of your report, let us see what we have to do. First of all, we very naturally require a report of a complete uranalysis, so that we can determine absolutely the functioning of the kidneys and the probable condition of the bladder. Then we want to know just how the attacks of pain commenced; whether your patient carried any children to term and, if so, how many; whether she miscarried more than once; what is the state of the digestion, bowel movements and so forth; the menstrual habits; the height of the patient (because a weight of 106 pounds may be very little or may be quite satisfactory). In short, we want to have all those points elucidated upon which you undoubtedly have questioned her. Please remember, doctor, that our problem is much harder than yours, because you can see and talk to your patient, while we have to depend upon what you tell us.

The causes leading to cystitis may be congestion, retention of urine, abnormal urine, foreign bodies, traumatism, neoplasms.

The probability of congestion being responsible for cystitis would depend upon a history of disease of the uterus, of ovaries or of the tubes; upon the presence of pelvic or abdominal tumors obstructing the circulation; upon peritonitis, the normal congestion of menstruation and pregnancy, or a history of exposure to cold. In view of the fact that the present condition has persisted for twelve years, we are inclined to eliminate these causes as improbable, with the possible exception of the last one named.

Retention of the urine may be owing to stricture or neoplasm of the urethra, among other things, and it strikes us that the burning at urinating may result from some irritation of the urethra, rather than from any cystitis, or it may in turn, have given rise to irritation and inflammation of the bladder.

It is possible, also, that a small caruncle or other growth may make the urethra excessively sensitive, causing pain after micturition, while being exceedingly refractory to all remedial measures, except direct local treatment. In order to discover this, the urethra would have to be dilated carefully and inspected. If this passage is diseased, appropriate local treatment undoubtedly will go far toward clearing up the entire symptom complex.

Finally, a closer entering into the history would reveal whether there is a possibility of a foreign body being in the bladder. We confess to doubt it, in view of the fact that you declare the urine to be normal, as the presence of a foreign body certainly would have caused changes in the urine and would have produced other symptoms by which a definite diagnosis could have been made.

These are the salient points that will have to be considered in connection with your case before satisfactory treatment can be instituted.

We suggest that you send a 4-ounce specimen of urine to a pathologist, for examination.

In the meantime, we are at a loss to recommend any definite treatment, because the exact existing conditions are beyond our ken. If you will kindly give us as much information as possible on this matter, we shall be delighted to aid you to the best of our ability.

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QUERY 6327.—"Permanence and Toxicity of Anesthaine." H. D. S., District of Columbia, inquires: (1) If anesthaine were applied to the nasal mucous membrane once a week for six weeks, would there be danger of creating a habit? (2) Would the contents of a 1-ounce vial be usable one year after it was opened? (3) How long after application to the unbroken mucous membrane before local anesthesia is produced? (4) What is a toxic dose when given subcutaneously? (5) In case toxic symptoms developed, would the treatment be that of cocaine-poisoning?

The anesthetic action of anesthaine is due, as you know, to the presence of 3 percent of stovaine, chemically the hydrochloride of alpha-dimethylamine-beta-benzoylpentonal. The toxicity of this drug is less than half that of cocaine and, as ordinarily used, it is not known to produce habit. Still, it is a question whether it would be advisable to apply it to the nasal mucosa at too frequent intervals. However once a week for six weeks or even a little longer would, it seems to us, be perfectly safe. Nevertheless, it is advisable not to let the patient know what the drug is.

We question the desirability of opening an ounce vial and using a little of the contents week after week during the length of a year.

Anesthaine, when it leaves the laboratories, is sterile, we need not tell you that; but, stovaine is decomposed by even traces of an alkali, while, undoubtedly, some change occurs through oxidization from the atmosphere; moreover, the constant removal of the stopper and insertion of an instrument would, unquestionably, infect the fluid. For that reason, we recommend the use of the ampules.

It is impossible to say just how long it will take to produce satisfactory anesthesia of the unbroken mucosa. In some instances, anesthesia is profound in two minutes; at other times, it is incomplete five minutes after application. However, if the mucosa has been thoroughly cleansed and dried before the solution is applied, anesthesia occurs much more rapidly. It is always best to test conditions at minute-intervals.

Very large doses (as much as 2 fluid drams) of anesthaine have been injected without causing toxic symptoms, while, as you may be aware, 1 full grain of the pure stovaine has many times been injected for producing spinal anesthesia. Under ordinary circumstances, though, it is rarely necessary to inject more than 30 or 40 minims of the stovaine. Where an extensive incision has to be made, anesthaine may be diluted with distilled water and the infiltration-method employed.

It should be borne in mind that stovaine, instead of constricting, as does cocaine, the blood-vessels in the area to which it is applied, dilates them.

Untoward effects following the use of anesthaine rarely have been seen, but, when they have occurred, these have consisted in sweating, nausea, and headache. The patient then should be kept in a darkened room, the head be lowered and strong black coffee administered; the latter sometimes acting most quickly if injected per rectum. If coffee is not available, caffeine may be used instead.

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QUERY 6328.—"Hasty Eating?" D. F. P., New York, desires to know whether there are on the market preparations which in a measure "counteract hasty eating without the proper chewing and insalivation of the food; that is, is there anything possessing the properties of saliva or that would have the effect of saliva upon food for the use of that class of people who gulp things practically whole?"

It is true that in the animal kingdom the most active animals gulp their food without chewing and that those animals which chew their food most deliberately, particularly the ruminants, are not characterized by excessive mentality, energy or acumen. Nevertheless, the conformation of the human teeth indicates the necessity of breaking up to a certain degree the food to be ingested before the task of breaking it down is imposed upon the stomach. Of course, it is possible to replace, to a certain extent, the action of the saliva upon the starches of the food, by administering diastase and similar preparations, but, it is evident that the attempt to force the stomach to accomplish more than its allotted share of work must sooner or later end disastrously.

While the peculiar mechanical action of the stomach upon its contents tends to break up food particles that have been introduced, it cannot be expected that this process can work in an unlimited degree, and unduly large or solid chunks of food that have been swallowed will be affected only superficially by the complicated action of the stomach and its secretions, after which they will be passed on into the intestines and there are sure to cause trouble, especially after having been acted upon by the bacteria residing in the tract.

Instead of attempting to relieve his patient of the task of chewing and breaking up his food and thereby establishing an illusory shortcut in the feeding-process, the doctor should inform him of the mechanism of digestion and demonstrate to him the errors of his ways, insisting absolutely upon the urgent necessity of breaking up the food that is taken, if digestive disease and worse is to be avoided.

The habit of swallowing food unchewed is sometimes induced by greediness, more often it is sheer laziness. The day when we can supply our bodies with sufficient fuel to last us for twenty-four hours by swallowing a few "tabloids" is not yet—nor, probably, ever will be.

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QUERY 6329.—"Recurrent Mastitis, Toxic Neuritis." G., Oregon, has under observation a woman of about 40, mother of several children, who has had a few miscarriages, and who has frequently inserted into the vagina a tablet consisting of alum, boric acid, salicylic acid, thymol, and zinc sulphocarbolate, without subsequently using a douche. "Her breasts have always been sore at the menstrual periods, and sometimes between times; some menstrual periods may, possibly, be passed without the breasts being sore. A few times the menses have been delayed for from six to fourteen days (fourteen

days the last period), and then there has been more tenderness than usual and the condition has persisted for a longer time. The soreness seems to be in the ducts, which are enlarged and freely movable. Now there is a tender nodule of about the size of a walnut in one breast, but which sometimes disappears. The patient is slender (105 pounds) and has always been so. She also is anemic in appearance. Is it possible that the alkaline antiseptic tablets caused uterine irritation, which in turn produced the mastitis?"

Advice also is desired in the following case:

"A quite fleshy woman of sixty fell with a jar under her arm and fractured a clavicle, there being a very tender spot at about the junction of the middle and outer third. The fixation dressing, put on a week after the injury, was removed at the end of four weeks; but, since then she has been complaining of pain down the inner anterior part of the arm to the elbow and of inability to raise the arm even to the level of the shoulder without experiencing pain. The x-rays reveal neither displacement nor dislocation. The arm is slightly larger than the sound one. No paralysis is evident. Her breath is very bad and at times she has severe headache. I have been unable to obtain a specimen of her urine, although I have asked for it. What may be the cause of the pain in the arm?"

It is impossible, of course, without making a thorough examination and testing the reflexes and electrical reactions, to venture a diagnosis in the second case; however, it is probable that the neuritis present is of toxic origin and will disappear after a thorough course of elimination and correction of intestinal fermentation. You should insist upon obtaining a specimen of urine, and an analysis doubtless will reveal high acidity and other evidences of autotoxemia.

As to case 1, there is no good reason for believing that the employment of the tablets, as stated, could set up mastitis. Had we a clearer idea of the condition of the pelvic organs, we might be able to discuss the case more intelligently; but, as there have been miscarriages, it is probable that an endometritis exists—possibly even the adnexa being involved. If there is any uterine discharge, send a specimen to a competent pathologist, for examination. Is there any discharge from the breasts upon manipulation; if so, submit a specimen of this also.

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QUERY 6330.—"Prolonged Administration of Calcium Salts." P. T. G., South Dakota, asks as to whether or not the long-continued use (say, for a period of two or three months) of calcium salts, especially the chloride and the lactate, is likely to prove harmful?

Personal experience would lead us to regard such procedure as undesirable. However, authorities differ materially regarding the action of the calcium salts. It must be remembered, though, that calcium chloride has a strong affinity for water and, therefore, is more irritant than the other chlorides of the alkaline earths, and, so, should be prescribed only in dilute solution. It is absorbed with great difficulty, and not infrequently produces gastric disorder.

The lactate, naturally, is the preferable preparation, still, neither salt should be administered steadily for prolonged periods. As a matter of fact, the effect of the drug upon bleeding and albuminuria as a rule is manifested within a few hours and persists for several days.

The important point to be remembered is that the prolonged administration of calcium decreases rather than increases the coagulability of the blood. The use of the drug, therefore, should be stopped for several days after it has been taken for six or eight doses. Despite the results reported by Loeb, it must be borne in mind that hemophiliacs seemingly are unable to absorb the calcium salts from the alimentary canal.

Ross recommends the administration of calcium chloride and the lactate in cases of persistent dull headache associated with heaviness, listlessness, decreased coagulability of the blood, and a general lymphatic temperament.

In cases of calcium-insufficiency, where the body is starved of its proper proportion of salts, the phosphate of calcium proves most effective, and a combination of iron phosphate, calcium phosphate, potassium phosphate, and magnesium phosphate (nucleinated phosphates) may be given for prolonged periods.

As you are, of course, aware, the calcium salts should not be administered to patients with arteriosclerosis.

Cushny believes that the lime salts are not likely to be of benefit in rickets or osteomalacia, unless these are directly owing to calcium-starvation. "The condition," he says, "is unlikely to arise in the human subject." He also asserts that "in hemophilia there is no deficiency of lime in the blood and the administration of lime by the mouth could not accelerate or in any way alter the clotting of blood." With this conclusion, we cannot concur.